POPULAR
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14 – 20 February 1985

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Vol 4 No 7

Black week for Acorn

ARE YOU THE UK'S GREATEST GAMES WIZARD? FIND OUT ON P36!

THE FUTURE of Acorn's BBC and Electron computers is seriously in doubt after the company last week suspended sales of its shares after they had fallen to a low of 23p.

The suspension at 2.52 pm on Wednesday – leaving the shares at 28p – came after a week of futher difficulties for the troubled company.

Increasing speculation and rumour about the future of Acorn began after the group ten days ago appointed a temporary chief executive, Dr Alexander Reid, to attend to the day-to-day running of Acorn Computers.

Shortly after his appointment Acorn made the first redundancies at its Cambridge headquarters – shedding 31 of its 450 staff.

On Wednesday, the company announced that it had split from its prestigious financial advisors, Lazards, and that its stockbrokers, Cazenove, had resigned. Following the departure of Cazenove, Acorn's shares were suspended and merchant bankers, Close Brothers, has been appointed by Acorn to replace Lazards. Since then Acorn has been in discussions with Close Brothers regarding a radical reorganisation of the company and an announcement is expected this week.

In the meantime, Acorn also cut down the number of its distributors from 17 to six, and abandoned its plan to take over Torch Computers.

"Acorn is currently involved in determining an internal reorganisation", said a spokeswoman for the company. Acorn has declined to comment any further on its position.

The Stock Exchange has launched an enquiry into the dealings in Acorn shares in the four days prior to their suspension. Acorn shareholders were not told of the Lazards split until last Wednesday, four days after their sacking by Acorn chief's

Hermann Hauser (left) and Chris Curry

Chris Curry and Hermann Hauser.

The disagreement between Lazards and Acorn is believed to have centred on a difference over the best approach to solve the compa-

continued on page 5 ▶

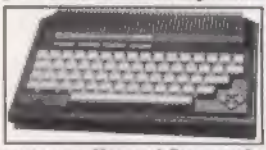
Bizarre move on Plus/4

COMMODORE has followed Sinclair and Acorn and has cut its prices – but only on its new Plus/4 micro.

The Plus/4 comes down to £149.99, slashed from £299.99.

The C16 remains at £130, and the Commodore 64 stays for the time being at £199.99.

Commenting on the new price, Commodore's general



manager, Howard Stanworth, said, "At £150, we're offering the public a powerful and versatile computer at a price that until now was designed only for first time buyers."

continued on page 5 ▶

Lynx 128K rises from the ashes

PRODUCTION of the 128K version of the Lynx computer – the 'Laureate'– is to begin again, selling for a competitive £299.

Anston Technology, which shortly before Christmas bought the assets to Computers, after its receivership, and the rights to the name Lynx, has announced new manufacturing plans for the Lynx range.

"Production of the Lynx 128K and disc drives will restart shortly at Chapman-

continued on page 5 ▶

INSIDE) FIND YOUR LOCAL COMPUTER CLUB – P10)

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POPULAR Computing WEEKLY

Vol 4 No 7

View

"The home computer bubble has burst." How often have you read that in the last week?

Of course it is nonsense. The home computer industry may not be increasing in size at the speed it once was, but still increasing it is.

The City's current attack of nerves concerning all things micro and the media hype that blows up a spate of bad news into the end of the world as we know it is an oversimplified view of the last two weeks' events.

In any business there are winners and losers. With the micro industry, something approaching 60 per cent of sales are made in the three weeks prior to Christmas. And what we are now seeing at Acorn, Oric and Commodore is the result of getting it wrong at Christmas.

To extrapolate from this that the home computer industry is finished is ridiculous.

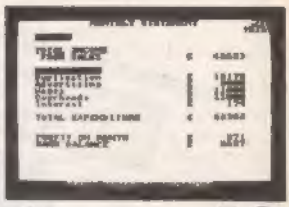
What about the companies that did get it right – Sinclair with its Spectrum models and Amstrad with the CPC464? They are quietly forgotten. Yet these are the companies who are now driving and controlling the market. The current price war has been deliberately precipitated by Sinclair and it puts pressure on its competitors at a time when some can least afford it.

In Acorn's case outside influences have for the present taken control. Apple went through a similar trauma two years ago and came back strong and Acorn might, too.

Commodore also has its problems, and it too seems to have taken refuge in a quick sell-off with its (so far) unsuccessful Plus/4 model.

But the micro game is far from played out yet and there are still rich rewards for the winners.

Presents...



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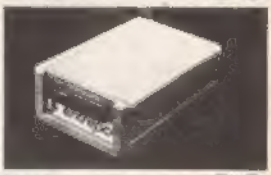

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ABC

56,052 copies sold every week (Jan-June 1984 ABC).

How to submit articles Articles which are submitted for publication should not be more than 2000 words long. The articles, and any accompanying programs, should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here — so please do not be tempted. **Accuracy** *Popular Computing Weekly* cannot accept any responsibility for any errors in programs we publish, although we will always try our best to make sure programs work.

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Crisis at Acorn

◄ continued from page 1

ny's present difficulties. Lazards are believed to have favoured a sale of Acorn under which Curry and Hauser would lose control.

A year ago, Acorn was valued at £216m on the USM Stock Market – now it is worth £31m. Only 10% of the company's equity was placed on the USM; 85% of the remaining equity is still owned by managing director Curry and Hauser.

Forecasts of Acorn's financial performance for 1984-5 have been radically revised following the share suspension. Wood Mackenzie, the stockbrokers, had estimated profits of £8m. Now it is forecasting a £3m loss.

The company has sustained several recent financial setbacks. The company lost around £6m when it withdrew from the US market leaving only a small research facility in Palo Alto, California. A £3.5m advertising campaign over Christmas drew sales of around 200,000 machines – however, about 300,000 had been expected. Reducing the price of the Electron to £129, in competition with the Spectrum + at the same price (see *Popular Computing Weekly*, January 31) may lead to a further paper loss, caused by writing down the value of existing unsold stocks.

Plus/4 slashed

◄ continued from page 1

Commodore's marketing manager, David Gerrard, denied that the Plus/4 would now take sales from the established 64 model. "The Commodore 64 is in a different market; it is noted for its communications, sound and graphics capabilities. Besides, it's an institution, and you can't get rid of institutions. The new Plus/4 price will, however, have a dramatic effect on Sinclair and Acorn."

The new price appears to apply to Europe only. In the US, where Plus/4 sales have been extremely poor, the price remains, at the moment at between $275 and $325.

One suggestion made for the bizarre new pricing of the Plus/4 has been that the machine is to be phased out in this country, and that Commodore is selling off its remaining stocks as quickly as possible.

David Gerrard categorically denies any such suggestion: "The Plus/4 will continue to be manufactured in Corby. We went into production of the Plus/4 at a very low level to start with – now we've changed our minds."

Two weeks ago Commodore cut staff levels at its Corby manufacturing plant by over 15%.

More discs for the QL

A SECOND disc drive system has been launched for the QL.

Medic Datasystems has begun sales of a Toshiba 5¼ inch double-sided double-density disc drive and interface for the machine. The device with a formatted capacity of 737K is supplied complete for £249.95. A dual disc version costs £399.95.

The company has also produced a range of memory expansion cards for the QL; 64K (£99.95), 128K (£129.95), 256K (£169.95) and 512K (£259.95). The latter can only be powered if the Medic disc unit is connected.

Details from Medic Datasystems, International Hs, Cliddesden, Basingstoke, Hants (0256 52703).

Lynx revived

◄ continued from page 1

Brayfield in Cambridge and Parc Electronics in Wales", said Dick Greenwood, who heads Anston, together with Alex Chapman. Dick was formerly chairman of Camputers. "We will also be introducing a 1M disc drive."

When the Lynx 128K is relaunched – between now and the end of May – it will cost £299, as against its previous price of £399. The 250K 5¼ inch single-sided, double-density master disc drive with controller, which was £344, will be relaunched at £249, and the 250K slave disc drive will be £149 (compared with a previous £229).

The new 1MB master drive plus controller will be launched at £269, and its slave counterpart will cost £169.

"We are still sorting out what we will be doing on the software side – the 128K Lynx is CP/M compatible," Dick continued.

Anston has decided not to restart production for the 48K and 96K models for the UK, although full support will be given to existing owners in terms of software and peripherals.

Micro manufacturers besiege Moscow

THREE British computer manufacturers are looking to Russia as the next big micro market – competing for orders which could be worth £200m.

At Technobuch '85, a ten-day long micro exhibition in Moscow, Acorn, Sinclair and Memotech micros were exhibited. Each of the three manufacturers is hoping to pick up a substantial slice of the Soviet educational market – there are around 64,000 schools in Russia, and it is said the Russians plan eventually to have 20 micros in each school.

Sinclair, represented by Jan Tyszka, its European Business Development Manager, sold the dozen Spectrum machines on its stand to the Ministry of Higher Education. "Sinclair has no big firm order as yet, but Jan Tyszka will be going back to Russia soon for more negotiations," said a Sinclair spokeswoman. "We are optimistic about our chances of penetrating the Russian schools."

The company also had a number of ZX81s on show – which do not need any export licence, as the other micros do – and one QL, which Sinclair was allowed to exhibit, but not to sell.

Acorn was represented by 3SL, its Eastern European distributers. Technobuch '85 was the third exhibition at which 3SL has shown BBCs and Acorn won a £20,000 order from the Moscow Education Institute at the show. "This order is the result of a year's work by 3SL – these things take a long time to come through," said David Springle of 3SL. The BBC machine has been fitted with a Cyrillic character set for export to the USSR.

The third machine, the Memotech 512, also has a Cyrillic character set for the Soviet market. Its distributors, Spectrum Group which represented Memotech at Technobuch, was unable to sell any machines at the show, as it had not acquired the necessary export licences in time. However, Neil Johnson, who represented Spectrum Group, is enthusiastic about the Memotech's chances. "We have been invited back to Russia by the State Committee for Science and Technology in March to give an exclusive demonstration of the machine.

New Amstrad before summer

FURTHER to the article on Amstrad's new machines (*Popular Computing Weekly*, February 7), it now seems likely that the CPC664 is to be announced in April.

It also seems likely that the 664, like the 464, will be available with either a 'green screen' monitor and a colour version. It is the monochrome model that is expected to cost around the same as the colour monitor version of the 464. The colour 664 will probably be around £100 more.

When Computers went into liquidation, in May 1984, it had a new micro in development, which contained a built-in 3½ inch disc drive. "We are looking at the possibilities of the new micro, but it is not at the top of our list of priorities," Dick said.

The new Lynx products will initially be available by mail order from Anston Technology. Details from Anston Technology, Camside Works, 2 Fen Road, Chesterton, Cambridge.

Letters

Interesting points

We were pleased to see Andrew Pennell's review of the Enterprise 64 in your January 3rd issue – particularly as the machine had only been on sale for a few weeks.

We found his appreciation of our graphics, sound and Basic most gratifying.

However, there are a couple of points arising from the review that your readers might find of interest.

We decided to use edge fingers on the printed circuit board to connect to peripherals as this is proven to be the most reliable and cost effective method. Although there are no polarising slots on the board, cables cannot be inserted wrongly as there are moulded 'pips' protruding from the connector housing. The cables supplied with the review model were hand assembled and not representative of the production versions.

When using the built-in word processor, text can be printed out in both 40 and 80 column format. Text typed on to a 40 column screen, as is usual when using a domestic TV, can be saved, reformatted using the function keys, and printed in 80 column. A Paragraph Move facility is included.

We were sorry to see that Andrew disliked the Enterprise keyboard. Opinions vary – it's largely a matter of personal preference. To date we've found users' comments encouraging, perhaps he will find that familiarity will improve his opinion.

The success of any home computer manufacturer is dependent upon the software available. The Enterprise offers tremendous opportunities to programmers and software houses have been quick to realise this. We are currently working with several major software houses to produce new programs and convert existing ones.

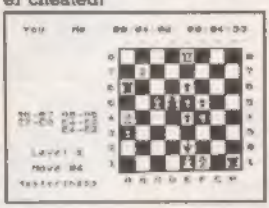
This is in addition to the programs appearing under the Enterprise Programs label – four titles at present and 12 by the end of February, followed by a further 25 by March/April.

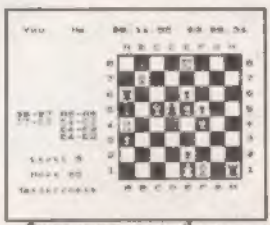
Steve Groves
Technical Support
Enterprise Computers
31-37 Hoxton Street
London N1

The computer cheats!

I have been playing Psion's *Chess* for some time now – and have until now found it an excellent tutor for the game.

However, I have just set up a game that I left and – to cut a long story short – the computer cheated!





As you can see, the pawn moves from E4 to E2 – clearly an illegal move, unless they've changed the rules.

I would appreciate anyone's comments, as I was winning at the time.

P Mellor
11 Lime Tree Avenue
Retford
Notts

Software distribution

I am writing in reply to the comments made by J Keene and J Tullin (January 3 and 30 issues, respectively) regarding software distribution.

Websters Software sources software from over 200 suppliers and receives for evaluation over 50 programs per week. It is not our policy to require pre-release advertising and indeed we prefer the advertising to be co-ordinated with the presence of the stock in-stores. We do not have a fixed number of releases per month but adjust our distribution to meet the demands of the market-place and would never attempt to dictate consumer demand.

The chart listings published in this magazine are compiled strictly from computer sales reports and reflect our sales to the trade in the previous seven-day period. We also poll chart-return stores to determine top-ten selling lines across the counter each week and use this information to guide our stock-reordering.

It takes Websters Software no longer than 48 hours to distribute new titles nationwide and I would suggest that J Tullin's perception of two months lead time is created by the pre-release advertising which Websters does not endorse.

An orderly market of free competition provides the greatest opportunities for new and innovative software publishing and it will always be our position to contribute to that market rather than, in any way, attempt to control it.

Martin Corral
Websters Software
Curzon House
Middleton Estate
Guildford
Surrey

Equally reliable

On January 22 Acorn's managing director, in a letter of "comfort" to the press, states:

"The BBC Micro and Electron are the most reliable by far of all the popular micros available. A recent survey by Business Decisions revealed that only 3% of Acorn's micros are returned faulty in the first six months, compared with 23% of Sinclair Spectrums, 18% of Commodore Vic 20s and 13% of Commodore 64s."

In view of the report carried by the relatively independent *Personal Computer News* magazine concerning this same survey we would observe that the Acorn statement again fails to acknowledge that Amstrad computers are equally reliable – yet Amstrad computers comprise a computer system, monitor and cassette recorder.

William Poel
Amsoft
Brentwood House
168 Kings Road
Brentwood
Essex

Sinclair too has taken exception to the survey carried out on behalf of the relatively independent firm Aspect, Acorn's advertising agency.

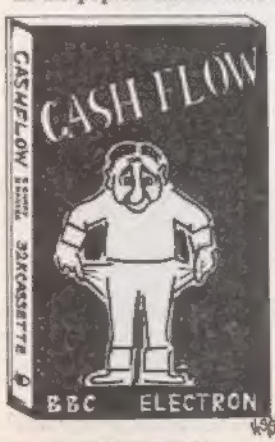
Release date

Having been tempted by the news of Commodore's fast 1542 disc drive for the C64, frustration is now setting in as I wait for its arrival.

There seems little point in buying the existing 1541 model as C64 cassette programs with fast loaders now load just as fast. Can you please throw some light on the 1542's possible release date?

N Card
9 New Hayes Road
Tunstall
Stoke-on-Trent
Staffs

Bad news, I'm afraid. The 1542 has been shelved indefinitely by Commodore which plans instead a new 1571 disc unit which is scheduled to arrive in the Summer. It will, however be both considerably faster and pricier than the 1541. It features a built-in 6502 processor, 2K Ram, 32K Rom and a 360K (formatted) capacity.



MUSIC VOUCHER 5

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Trade and export enquiries welcome

User Groups

Joining a computer club can be an excellent way of getting to meet other micro enthusiasts and finding out more about your machine. Last week the entire workforce of Popular devoted their lives to ringing every number, checking every address, climbing every mountain and leaving no stone unturned in the creation of an up-to-date user group list.

We may never do it again so grab it while you can.

North

Preston *Preston BBC Micro User Group* Contact: Duncan Coulter, 8 Briar Grove, Ingol, Preston Tel: 0772 725793.

Huddersfield *Huddersfield BBC Micro User Group* Contact: Howard Walbers, 2 Barrett Clough Head, Slaithwaite, Huddersfield.

Maltby *Maltby TI User Group* Times: 2nd Tuesday of each month, Contact: Mark Lee, 89 Rotherham Rd, Maltby, W Yorkshire.

Washington *Washington Sinclair Users Group.* Venue: Columbia Association, Columbia Community Centre, Tyne & Wear.

Stockport *Kinder Peek Computer Club.* Venue: New Mills School, Church Lane, New Mills. Machines covered: Any. Contact: G M Flanagan, 11 Sundown Close, New Mills, Stockport, Cheshire. Tel: 0663 44081.

Tyneside *Computertown NorthEast.* Venue: Science & Engineering Museum, Blandford House, Blandford St, Newcastle-on-Tyne. Times: every Saturday 10am-4pm. Membership: 100. Machines covered: Any.

Liverpool *Merseyside Co-operative User Group.* Venue: Christopher St, Liverpool. Times: every Tuesday at 7pm. Membership: 20. Machines covered: Any. Contact: Keith Driscall, [illegible] Melville Rd, Bootle, Merseyside.

Blacburn *Blackburn Computer Club.* Venue: Fernhurst Hotel, Bolton Rd, Blackburn. Times: Fortnightly on Mondays. Machines covered: Any. Contact: John Schofield, 1 Sutton St, Feniscowles, Blackburn. Tel: 0254 28127.

Cumbria *West Cumbria User Group.* Contact: P Majid – 0946 62732.

Skelmersdale *Skelmersdale User Group.* Venue: [illegible] Heversham Birchgreen (Community Centre), Skelmersdale. Times: Fortnightly on Thursdays. Membership: 30. Machines covered: Any. Contact: Mr P Rogers, 6 Lowcroft Ashurst, Skelmersdale.

Little Sutton *Ellesmere Port Computer Club.* Venue: St Paul's Church, Hooton. Times: Fortnightly. Membership: [illegible]. Machines covered: Any. Contact: Mr Corcoran – 051 327 3912.

South Yorkshire *South Yorkshire Personal Computer Club.* Times: 2nd & 4th Wednesday of the month. Contact: Eric Cox – 0742 550388.

Tamworth *Tame Computer Club.* Venue: Tamworth Activity Centre. Times: 1st & 3rd Fridays of the month. Contact: Tony Beckett, [illegible] Maitland, Glascote Heath, Tamworth, Staffordshire. Tel: 0827 53473.

Hull *Forum 80 Users Group.* Venue: On-line database with associated Users Group. Contact: Neil Barnby, 120 Fifth Avenue, Northall Estate, Hull. Tel: Hull 582 121.

Cumbria *Furness Computer Club.* Times: Every other Wednesday. Membership: 20. Machines covered: Any. Contact: Richard Wade, 67 Sands Road, Ulverston, Cumbria.

Manchester *Manchester Sinclair Users Group.* Venue: Longsight Library, Stockport Road, Manchester. Times: Every Wednesday at 7.30. Membership: 30. Machines covered: All Sinclair. Contact: Mr Krampf, 14 Mellar Rd, Longsight, Manchester. Tel: 061 2256997.

Manchester *Acorn User Group (North).* Contact: John Ashurst, 20 Verdure Close, Failsworth. Tel: 061 881 4962.

Midlands

Stratford *Stratford Computer Club* Venue: Wesley Hall, Old Town, Stratford-on-Avon. Times: 2nd Wednesday of every month at 7pm. Membership: 120. Machines covered: Any (mostly BBC's and Spectrums). Contact: Chris Parry, 15 Kippling Road, Stratford.

Bedfordshire *Bedford Computer Club.* Venue: Star Social Club, Batts Ford, Bedford. Times: 1st and 3rd Monday of each month at 7.30pm. Membership: 45. Machines covered: Any. Contact: W Thompson, 2 Sandon Close, Sandy, Bedfordshire. Tel: Sandy 82365.

Birmingham *Acocks Green Computer Club.* Venue: St Mary's Church, Acocks Green. Times: 2nd & 4th Thursday of each month. Machines covered: Any. Contact: Mike Bedford-White, 16 Westfield Rd, Acocks Green, Birmingham B27 7TL. Tel: 021 707 3100.

Solihull *Croft Computer Group.* Contact: Susan Jay, 17 Colebrook Croft, Shirley, Solihull, W Midlands. Tel: 021 744 3693.

Wolverhampton *West Midlands Sinclair User Group.* Venue: Dunsdale School, Wombourne, Wolverhampton. Machines covered: Sinclair/CBM64. Contact: Graham Walden, [illegible] Planes Lane, Wombourne, Wolverhampton. Tel: 0902 894744.

Birmingham *Birmingham Atari User Group.* Venue: Matador Public House, Bull Ring, Birmingham. Times: Every Thursday at 7.30pm. Machines covered: Atari. Contact: C S Boswell. Tel: 021 359 4346.

Coventry *Coventry Computing Circle.* Contact: Chris Baughan, 9 Hillan House, Smithford Way, Coventry. Tel: 0203 25802.

West Midlands *3802 Midlands User Group.* Times: Twice per school term. Membership: 20. Machines covered: Research Machines. Contact: Spencer Instone, [illegible] Avenue Road, Leamington Spa, W Midlands. Tel: 0926 38751

Walsall *Walsall Computer Club.* Venue: Parkhall Community Centre. Times: 2nd & 4th Mondays of the month. Machines covered: Any. Contact: Alison Hunt, 58 Princes Avenue, Walsall, W Midlands. Tel: 0922 23875.

Birmingham *Birmingham ACC.* Venue: Free Church Hall, Land Lane, Marston Green, Birmingham. Times: 1st & 3rd Thursdays of each month. Machines covered: Mainly CBM and BBC. Contact: B Edwards. Tel: 021 707 1498.

West Midlands *West Midlands ACC.* Venue: Elmfield School, Love Lane, Stourbridge, W Midlands. Times: 2nd & 4th Tuesdays of each month. Machines covered: Any. Contact: John Tracey, 100 Booth Close, Brierley Hill, Kingswinford, W Midlands. Tel: 0384 70097.

Nuneaton *Nuneaton Computer Club.* Contact: T Schweiger, 3 Greenside Close, Whilestone, Nuneaton.

Rugby *Rivel Computer Club.* Contact: Chris Haine, 4 Cord Lane, Easenhall, Rugby.

Heanor *Heanor & District Computer Club.* Venue: Heanor Community Centre, Hands Rd, Heanor, Derbyshire. Times: Every other Wednesday at 7.30. Contact: J Wright, 10 Thorpes Rd, Heanor. Tel: Langley Mill 763399.

Nottinghamshire *Nottingham Micro-Computer Club.* Venue: Castle Gate Congregational Centre, Castle Gate, Nottingham. Times: Weekly on Mondays. Contact: Steve Goldingray, St John's College, Brancote Village, Beeston, Nottingham. Tel: 0602 224046.

Peterborough *Commodore Users Group.* Venue: Bretton Woods School, Peterborough. Times: Fortnightly on Wednesdays at 6.30pm. Machines covered: Any Commodore. Contact: Mrs D Bradley, 25 Coniston Rd, Gunthorpe, Peterborough. Tel: Peterborough 74306.

Corby *Universal Micro Club.* Venue: Lodge Park Sports Centre, Corby. Times: Fortnightly on Thursdays at 8pm. Contact: A Ross, 6 Alness Close, Kettering. Tel: Kettering 516708.

Northants *Towcester Micro Users Group.* Contact: S J Clark, 83 Watling St, Towcester.

South and West

Ashford *Duncan Bowen Computer Club.* Venue: Duncan Bowen Youth Wing, Kingsnorth Rd, Ashford. Times: Thursdays 3.30-5.30. Machines covered: Sinclair, BBC. Contact: J Fanning, Ashford 0233 29804.

Bordon *Bordon District Computer and Electronics Club.* Venue: Community House, 110 Hollybrook Park Rd, Bordon, Hants. Machines covered: Spectrum, Commodore. Contact Nicola Watt. 04203 4082.

Alton *Alton Computer and Electronic Society.* Venue: Alton Community Centre, Amery Hill, Alton, Hants. Machines covered: BBC, Commodore, Spectrum. Contact: Kevin Weatherhead. 0420 87478.

Cowplain (Portsmouth) *Wecock Computer Club.* Venue: Wecock Village Centre, Eagle Avenue, Cowplain, Portsmouth, Hants. Times: Tuesdays. Membership: 20. Machines covered: All home computers. Contact: Wecock Village Centre. 0705 256823.

Dunstable *Chiltern Home Computer Club.* Venue: Five Bells Pub, Dunstable Library. Times: 1st and 3rd Mons (in the pub) 4th Mon (in the library) per month. Machines covered: All types. Contact: Stephen Betts, 42 Wallace Dr, Eaton Bray, Beds. 0525 220922.

Directory

Eastbourne *Eastbourne and District Computer Club.* Venue: St Aidan's Church Hall, Wiley Rd, Eastbourne. Times: 4th Wed per month. Membership: 43. Machines covered: Most home computers, Apple. Contact: Jim Booth, 12 Wish Hill, Willingdon, Eastbourne.

Enfield, Edmonton *Millfield Computer Group.* Venue: Millfield House Arts Centre, Silver Street, Edmonton, London N18. Times: 2nd Tues, 4th Thurs per month. Machines: All micros. Contact: Tony Gibbs, Farover, Barnet Rd, Arkley, Herts. 01-449 9619.

Flitwick *Flitwick Club.* Contact: J Rodger, 6 Longleat Close, Flitwick. 0525 712011.

Gloucester *Gloucester Mid-weekly Spectrum User Group.* Venue: 8 Linnet Close, Gloucester. Times: weekly. Contact: Barry Ledbury. 0452 23186.

Guernsey *Guernsey Micro Artists Club.* Membership: 10. Interests: computer graphics. Contact: Tony Thorne. 0484 449885.

Hampshire *Fareham and Portsmouth ACC.* Contact: The Warden, Portchester Community Centre, Portchester, Hants.

Lea Valley *Lea Valley Atari Users Group.* Venue: Broxbourne. Times: Fortnightly. Contact: M Tydeman, 128, Cadmore Lane, Cheshunt, Herts.

Nailsea *Byte Home Computer Club.* Venue: Youth House, High Street, Nailsea. Times: Fridays 7-10pm. Membership: 50. Machines covered: Contact: Mick Ellick, 3 Burrington Close, Nailsea, Bristol. 0272 864158.

Orpington *Amstrad User Group.* Contact: R A Pyatt, 23 Arundel Dr, Orpington, Kent. Orpington 20281.

Oxford *Oxford Personal Computer Club.* Venue: Donnington Community Centre. Times: 1st and 3rd Weds per month. Membership: 50. Contact: Sebastian Linfoot, Flat 10, Pembroke Court, Rectory Rd, Oxford.

Portsmouth *Portsmouth Co-op Club.* Contact: A May, 27 Victoria Rd North, Southsea, Hants. 0705 820339.

Romsey and Southampton *Romsey Area Dragon Computer User Group.* Venue: various. Times: 2-6pm Sats or Suns. Contact: Ashley Adamson, St Elmo, Slab Lane, West Wellon, Romsey, Hants. 0794 23041.

St Albans *St Albans Sinclair User Club.* Membership: 15. Contact: Adam Slater, 40 Waterford Rd, St Albans, Herts. 0727 64176.

Sheerness *Sheppey CC.* Venue: Seaview Hotel, The Broadway, Sheerness, Kent. Times: Saturdays, 2pm. Machines covered: Spectrum & QL. Contact: Stevyn London, 133a Alexandra Rd, Sheerness. Sheerness 664009.

SE London *QLSEL.* Venue: South East London College Student Union. Machines covered: QL. Contact. Reza Shahidi. 01-469 0691.

Southampton *Southampton ACC.* Contact: Paul Blitz, Chigwell Solent Close, Chandlers Ford, Eastleigh, Hants. 04215 69080.

West Herts *West Herts C UG.* Venue: St Steven's Parish Centre, Bricket Wood. Times: Every other Tuesday from 12th. 9pm. Machines covered: Tandy, BBC, Spectrum, Amstrad. Contact: J Byfield, Moonrakers, The Rutts, Bushey Heath, Herts. 01-950 1041.

Windsor *Nascom Thames Valley UG.* Venue: Frogmore Hotel, Alma Rd, Windsor. Times: Every other Thursday, 8pm.

Worle *Worle CC.* Venue: The Manor Inn, Worle, Avon. Times: Every other Monday, 7.30pm. Contact: Humphrey Bennett, 30 Bramble Wood Rd, Worle, Avon.

Chelmsford *Namebug.* Venue: Witham Library, High St, Witham, Essex. Machines: BBC, Electron. Contact Dave Watts, 60 Peel Rd, Chelmsford, Essex. Chelmsford 358127.

West Sussex *Midhurst & District CC.* Venue: The Grange Club, Bepton Rd, Midhurst, W. Sussex. Times: 2nd and last Thursday each month. Contact: Val Weston, 69 Peterfield Rd, Midhurst, W Sussex.

East

Colchester *Colchester Sinclair User Group.* Venue: Straight Road Centre, Colchester. Times: alternate Tues. Contact: Richard Lown. 0206 561066.

Colchester *Colchester Computing Society.* Venue: Severalls Social Club, Mill Lane, Colchester. Times: 1st and 3rd Weds per month. Contact: A Potten, 11 Foxmead, Rivenhall, Witham, Essex.

Rochford *S E Essex Computing Society.* Venue: Rocheway Centre, Rocheway, Rochford. Times: Mondays. Membership: 40-60. Machines covered: All. Contact: David Knight. 0702 218456.

Witham *Namebug.* Venue: Witham Library, High St Witham, Essex. Times: 2nd Thurs and 3rd Weds per month. Membership: 60. Machines: BBC, Electron. Contact: Dave Watts, 60 Peel Rd, Chelmsford, Essex. 0245 258127.

Scotland

Aberdeen *Kingsway Amateur Computer Club.* Venue: Kingsway Technical College, Old Glamis Road, Dundee. Times: Saturday 6.30-8pm. Membership: 35. Machines covered: Spectrum, Dragon, BBC. Contact: J Cooke. Tel: 0382 819021.

Aberdeen *Grampian Amateur Computer Club.* Venue: 35 Thistle Lane, Aberdeen. Times: Every Monday. Membership: 80-100. Machines covered: All types. Contact: Mike Elrick. Tel: 0224 741387.

Perth *Perth & District Amateur Computer Society.* Venue: Riverside Lounge, Bridge End, Perth. Times: Third Tuesday in month. Membership: 90. Machines covered: All types. Contact: John Sanderson, 4 Maypol Place, Perth. Tel: 0738 33961.

Edinburgh *Edinburgh Home Computer Club.* Venue: Crosswinds Community Centre, Tollcross, Edinburgh. Times: 2nd, 3rd, 4th Tuesday each month. Contact: Ian Robertson. Tel: 031 441 2361.

Carluke *Amsclub.* Venue: 42 Mount Stewart Street, Carluke, Lanarkshire. Machines covered: Amstrad. Contact: David Baxter.

Wales

Swansea *Swansea Computer Club.* Membership: 50. Machines covered: All home computers. Contact: B J Candy. 0792 203811.

Cardiff *Cardiff Sinclair and Amstrad User Group.* Venue: Central Hotel (Sundays) Corporation Hotel (Weds). Times: middle Wednesday and last Sunday per month. Membership: 150. Machines covered: All Sinclair and Amstrad. Contact: Steve Smith 0222 593237 or Mike Hayes 0222 371732.

Cardiff *Cardiff BBC User Club.* Venue: University College, Cardiff. Times: alternate Weds. Membership: 90. Machines covered: BBC, also IBM, Sanyo. Contact: Geoff Barker, University College, Cardiff.

Dyfed *ICPUG (Dyfed).* Machines: serious home. Contact: F J Townsend. 0554 891066.

National

Independent QL User's Group. Newsletter. Contact: Brian Pain, Oxford Street, Stony Stratford, Milton Keynes. Tel: 0908 564271.

Derenic Adventures. Machines: Commodore 64. Contact: Derenic Adventures. Tel: 0634 373212.

Club 64. Newsletter on disc. Machines: 64. Contact: Brendan Conray, 85 Upper Drumcondra Road, Dublin 9, Ireland.

Dutch QL Group. Machines: QL. Contact: Ron den Broems, Kroonstraddreef/27, 3067 RT Rotterdam, The Netherlands.

National TRS-80 and Video Genie User's Group. Newsletter. Contact: Brian Pain, 24 Oxford Street, Stony Stratford, Milton Keynes MK11 1JU. Tel: 0908 564271.

Format 40/80 BBC Disc User Group. Quarterly Newsletter on disc. Contact: Peter Hughes. Tel: 0272 692092.

Dragon Games Users Group (being formed). Bi-monthly newsletter. Machines: Dragon 32/64. Contact: M A Blease, Prince Street, Rochdale, Lancs. Tel: 0706 31239.

Your Atari. Bi-monthly newsletter. Machines: Atari micros and VCS. Contact: Gerald Forrester. Tel: 03552 49488.

UK Atari Computer Owners Club. Quarterly Magazine. Contact: Ron Levy, PO Box 3, Rayleigh, Essex.

Sinclair Amateur Radio Users Group. Newsletter. Machines: Mainly ZX81 and Spectrum. Contact: Paul Newman, G4INP, 3 Red House Lane, Leiston, Suffolk IP16 4JZ.

UK Intel MDS Users Club. Newsletter. Machines: All aspects of Intel semiconductor products. Contact: Lewis Hard, c/o Space Ltd, The Old Coach House, Court Row, Upton-on-Severn, Worcs. Tel: 06846 38751.

International Sharp User Group. Contact: Graham Knight, 108 Rosemount Place, Aberdeen, Scotland. Tel: 0224 0526.

Laserbug. Newsletter. Machines: BBC/Electron/Atom. Contact: Paul Barbour, 111 Dawley Ride, Colnbrook, Slough. Tel: 02812 3064.

Tangerine Users Group. Newsletter. Contact: Bob Green, 1 Marlborough Drive, Worle, Avon. Tel: 0934 21316.

British TI Users Club. Machines: Contact: Philip Rowley, 2 Woodside Crescent, Clayton, Newcastle-under-Lyme.

Beebug. Machines: BBC/Atom/Electron. Newsletter. Contact: David Graham, PO Box 50, St Albans, Herts AL1 2AR.

Camex 35 User Group. Contact: David Hitchins, 1 Fyfe Crescent, Bayldon, Shipley. Tel: 0274 580619.

Landscape

Program *Penetrator* **Micro** Commodore 64 **Price** £7.95 **Supplier** Melbourne House, Castle Yard House, Castle Yard, Richmond, Surrey

Ever had the sudden urge to save mankind? Well, here's your chance with *Penetrator*. *Penetrator* is another game in the *Scramble* family, but it has one unique feature which gives it the edge over the other versions of the old favourite. A screen editor is available which allows you to redesign the landscape, and add missiles and radar bases wherever you like.

First things first. Your job is to fly through four defensive rings, then blow up a neutron bomb cache hidden in the underground caverns. You have to be careful, though, because if you don't hit the bomb on the first pass – then it's back to the start. Radar bases track your movements and missiles make the going tough.

The graphics are good. Because only four or five colours are used at once, the action is clear, and it doesn't give you eye-ache after playing for an hour. I liked the music even better, though. Also included is a training mode which allows you to practise on the separate stages with an endless amount of lives (good idea, this).

Although easier than the original Spectrum version, *Penetrator* on the 64 is very playable - even my Dad liked it. The editing facility is good, if somewhat tricky to use. I can thoroughly recommend this one – have fun!

Tom Hussey

Double-entry

Program *+80 Finance Manager* **Micro** Spectrum 48K **Price** £19.95 **Supplier** Oxford Computer Publishing, 4 High Street, Chalfont ■ Peter, Bucks

How clever of *Popular* to realise that I'd need some way of managing the vast fortune I have!

They've provided me with a financial application which enables me to keep fully double-entry records of income and out-goings, log all my standing orders and obtain professional quality hard copy via an 80-column printer and interface.

The program itself is both versatile and reasonably friendly once its commands have been mastered. Choices are made by menu, but as there are so many of these it's as well to read the documentation first; this is well provided with examples, but could be clearer in parts.

All this is only available at a price, though the version for use with the 32-column ZX and Alphacom 32 printers costs less than half as much. I doubt the average household has need of computerised double-entry accounting, but a small business person with only a Spectrum will probably be well pleased with it.

John Minson

Thunderbolts

Program *Black Knight* **Micro** Commodore 64 **Price** £7.95 **Supplier** Interdisk, 249-251 Kensal Road, London W10 5DB

Black Knight is something a bit different in the way of normal platform games. For a start, it isn't necessary to dodge mutant telephones and flying fish when scurrying up platforms. In this much more down-to-earth game, you have to leap into the saddle and ride your horse to the goblin's castle where he has been guarding a treasure chest for 200 years.

There are several stages in the Black Knight's quest for gold and glory. First, he has to gallop across the countryside jumping over crevasses and dodging thunderbolts and fireballs. The close-up animation of the Black Knight riding through the countryside is some of the best animated graphic work I have ever seen. After finishing his trip across the lowlands, our hero has to leave his four-legged friend and do a bit of jumping himself. Then he comes up against a giant serpent, and has only his trusty blade to defend himself. The graphic effects are magnificent as you jump towards the snake and (theoretically) chop its head off.

Once inside the castle, our adventurer has to avoid traps in his search for the little green goblin and the treasure.

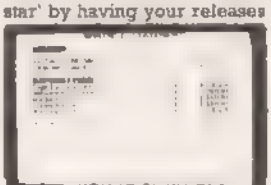
Black Knight is extremely playable, but can be quite tricky in places. This game has got what many others lack – originality. So if I were you, I'd polish the sword, fish out the cash and run out and buy this one.

Tom Hussey

Overheads

Program *Software Star* **Micro** CPC 464 **Price** £7.95 **Supplier** Addictive Games, 7a Richmond Hill, Bournemouth BH2 6HE.

This is not the first software house simulation ■ be released but it carries the Kevin Toms hallmarks of attention to detail and carefully tuned difficulty that made *Football Manager* such a hit. The set task is not easy – not only must you meet a substantial target profit in order to avoid getting sacked but also you must aim to achieve the status of 'software star' by having your releases consistently in the top of the charts.



Success is earned by a careful juggling of such things as the amount of hype or honesty you put forward to boost your image, pages of advertising you order each month, the number of games released, whether ■ ■ the Christmas boom or the summer slump, and the amount of time invested in the game. Long development time means higher overheads and fewer games that you can churn out but this is balanced against the increased likelihood of getting favourable reviews which can greatly influence sales figures (modest cough).

You are constrained by the fact that your existing games all have a finite lifespan after which sales fall off, unless you release a new product. This strikes me as something Kevin Toms should know nothing about, being at complete odds with his experience with *Football Manager*.

What makes this game a winner is the mastery of the art of suspense that also characterised *FM* – where lesser simulations would have instantly shown you the positions of the monthly software chart, here you are made to wait and sweat whilst your games slowly inch their way up. Unfortunately there are no on-screen highlights of what your personal mega-game looks like but it's still very. . . Addictive.

Tony Kendle

Major battles

Program *Empire of Karn* **Micro** Commodore 64 **Price** £7.00 **Supplier** Interceptor Micros, Lindon House, The Green, Tadley, Hants

Empire of Karn follows on from the *Heroes of Karn* as the second adventure in the Karn trilogy.

Like its predecessor, it is a graphical adventure in broadly the same sort of style as *The Hobbit* – the description of the location is accompanied by a picture of the place. Music is also used to help enhance the atmosphere.

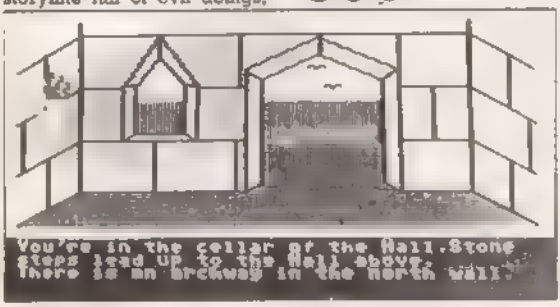
As with all these fantasy adventures, the program is accompanied by a detailed storyline full of evil doings, weird place names and major battles.

Your continuing quest is to save the Empire from the evil Zheff. Accompanied by Darin, you have to set out on a journey across the distant regions of Karn.

The computer is instructed on what you wish to do by using short English commands (eg *Take bottle of rum*). As with most adventures, you can save your position in the game for a later date. Although the graphics couldn't really be said to be outstanding, they do add an extra dimension.

Empire of Karn is fairly cheap, and is a reasonable buy if you are into adventures.

Tom Hussey



Ingenious

Program *Curse of the Seven Faces* **Micro** Spectrum 48K **Price** £8.95 **Supplier** Imperial Software, Imperial House, 153 Churchill Road, Poole, Dorset.

When so many adventures are produced with Gilsoft's *Quill*, and many of them are of a high standard, it's easy to forget that there's still room for other methods.

Imperial Software have a useful innovation in this text only quest. Type in '*Save' and you can not only save to tape for permanent storage, but also into a buffer allowing you to take potentially fatal decisions without having to mess around with a cassette recorder.

The adventure itself is good too. You have to defeat an evil wizard, but first you must locate the staff, spell book, hat and cloak of a dead mage. The search takes place in a multiplicity of atmospherically described locations, which really stimulate the imagination.

The puzzles are clever but not unsolvable and there's an ingenious maze, but most interesting is the use of 'teleportation' between regions of the land, instead of constant direction commands. As some of these 'gates' are one way you have to be careful that you've done everything before using them.

The vocabulary seems fairly broad, though perhaps a little specific in a couple of places, but the scrolling display looks old-fashioned. *Curse* is vast and enjoyable, but, sadly, expensive. Reduce its price by a pound or two and it would rate higher.

John Minson

A gamble

Program *Classic Racing* **Micro** CPC 464 **Price** £8.95 **Supplier** Amsoft, Brentwood House, 169 Kings Road, Brentwood, Essex CM14 4EF

Cast in the venerable tradition of *Football Manager* this is an entrepreneurial sporting simulation that is well worth a look if you enjoy that sort of thing. The basic idea is that you are the manager of a stable of ■ horses, playing against five other stables, all of which can be the computer ■ you have no friends, although it is much more enjoyable as a family game.

You start the season in the highly unlikely situation ■ knowing nothing about the qualities of your horses and you must sort out their strengths and weaknesses in time to win a packet at the four classic end-of-season races. Accompanying this is a sort of sub-plot where you hope to boost your winnings by gambling.

The highlights are the well programmed races together with appropriate sound and if you are feeling suitably ebullient it is good fun, frustrating and addictive. But ultimately you begin to realise that this game is a bit long winded, each season takes many hours to play, most of which time you are doing nothing. For instance, although it is enjoyable to watch the horses dawdle up to the starting line once or twice, in the long run it becomes tedious.

This problem aggravates the game's one major flaw – and it's a doozy. You can only save the game status after each race meet, which can take the best part of an hour. If you have to switch off unexpectedly then that's tough. Conversely, if you try to save the game when prompted, 'just in case', imagine the shock-horror when, having done so, it hangs up with a 'thanks for playing' message, necessitating a re-load.

Tony Kendle

Addictive

Program *Thrusta* **Micro** Commodore 64 **Price** £2.99 **Supplier** Software Projects, Bearbrand Complex, Allerton Road, Woolton, Liverpool

There is a huge quantity of Commodore 64 games material on the market ■ the moment.

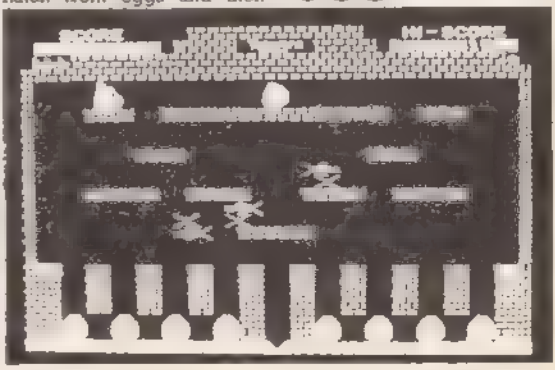
Although *Thrusta* isn't very complicated, it is a neat, addictive little package.

Your mission is set on the planet Spectra where aliens are rapidly taking over. They hatch from eggs and then emerge to create havoc. It is your job to nudge a boulder on top of them as they hover dangerously below.

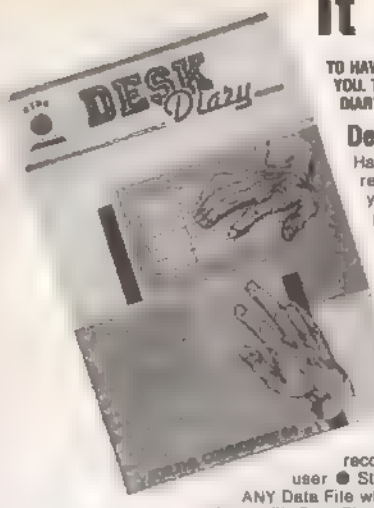
The screen display is a bit difficult to describe. Roughly, it consists of a series of platforms at different levels, with the eggs at the bottom. Although the graphics aren't amazing, they are quite adequate. Worth noting also is the fact that *Thrusta* doesn't have an irritating tune burbling away.

Not a top ten contender, but a good price and well worth a look.

Tom Hussey



It makes sense . . .



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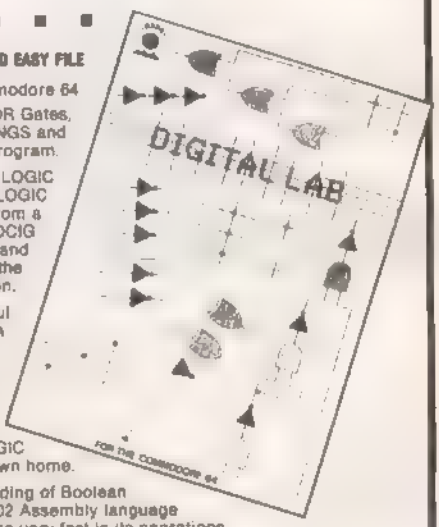

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Clubbing together

***John Cook** goes to Aylesbury and becomes an honorary member of the local computer club*

I had always believed that messing about with computers was something of a solitary occupation. There is *The Programmer*, a lone figure hunched over a monitor, fingers running over the keyboard, eyes closed in mystic union with the CPU, and *The Games Player*, wide-eyed and manic, hand on joystick, mind somewhere near Alpha Centuri. So the thought of a number of such people getting together in association to form a *club* of all things (or User Group to the cognescenti) seemed most strange – or at least it did before my recent visit to the Aylesbury Computer Club.

One Friday I joined one of its regular weekly meetings at the Grange Centre in Aylesbury. "It's a school during the day but doubles as a venue for evening classes and interest groups at night," explained newly elected chairman Jonathan Roberts. The school-like environment and furniture does not seem to dampen the obvious enthusiasm of its members. As I entered the room, I was greeted with the familiar computer synthesised cry of, "Ghostbusters!" A quick glance round the assembled company (in total about 30) suggested the existence of two sub-groups.

Zap fiends seemed to be all under the age of 16, and programmers above. And never the twain shall meet? I was later to find out.

The other officers of the club are Jonathan Hill (Treasurer) and John Turner (Secretary), who is the only 'professional' programmer amongst them. "I remember back in 1970 when we had a new computer at work with 64K of core memory," he told me. Things have come a long way in 15 years.

I asked about the club's history and was referred to Keith Pyott, who only recently retired from the post of Chairperson. "It started in October '81," he explained, "when a group of friends (mostly ZX 80 and 81 users) put a notice in the local library." So. . . it can be that easy. At present, the club has about 50 paid up members, I asked Jonathan Hill about the costs of running the club. Did they get any help from the local council? Surprisingly, no. "We're self-supporting," he said. "Weekly subs of 20p just about pay for the hire of the room, so we are free to use most of the money from the membership fee (£7.50 a year for adults over 17, £5.00 for juniors) to buy books and programs for the club library." Indeed, the club has an impressive array of utilities, games and books which any member may use – one of the more obvious advantages of User Group membership. Others include organised courses on such traditionally tricky subjects as machine code, and the occasional visiting speaker.

However, the club has changed over the years. Jonathan Hill again, "Things were different when we all had ZX 81's. . . it was more hobby-ist. There was a lack of software, so you had to write your own, and the limitations of the hardware made it a challenge. In a way, modern software kills off your own efforts because it is so good."

I asked him what he thought of the games-playing half of the group. He smiled. "I think games can be the motivation for interest in programming itself," he commented. One look as *Arcade Avenue* with its profusion of *Pokes* for every game conceivable confirms this, although at least one member of the club titled 'Joystick Jim' (the club's arcade fanatic and self-appointed *Invasion of the Bodysnatchers* groupie) would seem to be quite happy blasting everything in sight.

The micros in use that night were three Spectrums, two Commodore 64's and a QL, although BBCs often make an appearance, together with the occasional Apricot. The most common machine progression in the club seemed to be from ZX81 to Spectrum to QL.

Sir Clive has a lot to answer for one way and another. The arrival of the QL has caused much discussion within the club, as I found out chatting to Derek Longe, the club graphics expert. He nodded at the group around Jonathan Roberts' own machine, "They may be able to run a clock at the same time as another program, but I haven't seen them do anything useful with it yet." Derek himself does plenty of 'useful' things with his Spectrum; for a start, he was able to make enough money from writing an astrology program to buy a colour TV for his own use. His expertise in computer graphics is used to design such things as covers for the club newsletter (published monthly) and to help anyone that wants to know anything about Spectrum graphics, in the shape of his 'Graphics Corner', every week.

Meanwhile, back at the QL, Keith was recounting his problem with 'the missing Rom,' as reported by David Nowotnik – himself a founder member of the club – in *Popular Computing Weekly* Vol 3 No 50. As the intrigued QL owners pondered this conundrum and Keith was explaining how the Spectrum and QL reserved memory differently for arrays, something occured to me – this is really what user groups are really all about. A sharing of expertise and experience.

Any one person, in general, can only do so much sitting alone at a keyboard. Eventually, you are going to hit a problem you can't solve, or meet something you just don't understand. On your own, you could be banging your head against the same brick wall indefinitely. . . but if you bring the puzzle to a group of people, at the very least you'll be offered a new variety of wall to attack. At best, the problem will have been encountered before, and you will have save yourself considerable amount of brain strain. This is common in games playing, but also applies to programming.

However, club meetings don't simply consist of people picking each others brains. As John Baynton-Glen told me, "I'm pretty busy at the moment, so I haven't got that much spare time for programming. I just come here to look around and chat to old friends." At present John is concentrating on his Formula Ford 1600 racing aspirations, and is finding it hard going. "There's a lot of paperwork involved in trying to get sponsorship," he says, (amongst other things, he is currently sounding out several software houses). "I'm thinking of getting a BBC set-up to sort it all out."

At the moment, the computer trade is somewhat depressed – perhaps rightly so, with companies going under every week. I say take heart. The existence of such groups as the computer club at Aylesbury, the many others throughout the country (two others in the Aylesbury area alone) and the enthusiasm with which they are attended and run should give great cause for optimism – these clubs do much to indirectly support the industry, so why isn't the industry supporting them?

For the lone user, at less than the price of a good game, you can join a group, expand your computer horizons and make some new friends into the bargain.

For details of the Aylesbury Computer Club, contact John Turner at 6 Cambourne Avenue, Aylesbury.

The Popular guide – the whys and hows explained

User Group . . . try saying it slowly. User Group. Sounds vaguely seedy, doesn't it? But don't let that put you off joining or indeed forming one, because the experience is likely to be very rewarding indeed.

But first of all, perhaps we ought to ask the 32 Megabyte question – what is a User Group?

User Group is simply jargonese for a computer club. Associations of people with a mutual interest in computing, whatever aspect or form that may take. In fact, there are two sub-groups – Face to face or Postal – within this area of computing activity, which you should consider.

Postal Groups are usually organised on a national or international basis, with contact usually being via a news letter of in some cases, disc.

For you the potential member, they have the advantage of being able to contact users not immediately in your area or abroad. The disadvantage is that these organisations lack the spontaneity of face-to-face clubs . . . also, you may have to send a subscription to a far off and unknown place to join. Best to check them out with an enquiring letter first.

The main advantage of face-to-face clubs is that you get to meet real live people, just as keen about computers as you. They'll talk to you, help you out, and maybe even let you have hands-on experience of their own machine. Which brings us to . . . why join a User Group?

It's two o'clock in the morning. You are hunched over the keyboard, haggard and drawn. You are stuck. A programming bug? An impossible screen? Who do you turn to? By joining a computer group the chances are that you will find someone with a similar problem. At least you'll have a second opinion.

You'll also be able to take advantage of the other facilities the group may offer. Most run occasional courses on various aspects of programming, and have visiting speakers from time to time.

But what if there isn't a club near you?

Forming your own Group

First of all, stop and ask yourself if you are really prepared to spend several hours of hard, and often thankless, work in the routine running of your new organisation? If the answer is yes, give yourself a pat on the back and read on.

Postal Groups are easier to set up than Face-to-face Groups. The main problem, that of arranging a venue, does not exist . . . although you will need access to duplication facilities. Putting advertisements in free sections of the computer press, such as *Computerswap* in this magazine, is a good idea . . . or the manufacturer of your particular type of computer might help by providing you with a mailing list.

Face-to-face Groups are harder to set up. First test out the water by placing advertisements in the computer and/or local press, local computer shops and the local library. You'll soon know if you have a viable proposition . . . but if only a few people respond, don't be disheartened. Small groups have the advantage of being able to meet in members' houses.

A larger response may bring you extra help in your efforts, but needs further action. Here your local council, education department and library can help you with your next obstacle . . . the club venue.

The council/education department will often hire out rooms at a cheap rate to clubs of an 'educational' nature . . . into which yours should fall. With enough signatures, they may well provide some form of financial help. At the library, there will be a list of local clubs . . . even though a computer club may not exist, other club officials will usually be helpful in giving advice on general organisation.

Good luck, and don't forget to be included in our 1986 User Guide!

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Short comings

Hardware *Entrepo Quick Data Drive* **Micro** Commodore 64/Vic 20 **Price** £80 **Supplier** Spectrum Group Dealer Chain.

The Entrepo Quick Data Drive is a high-speed tape cartridge system designed to replace the Commodore C2N cassette used by the Vic 20 and C64 machines.

It offers the same facilities, plus a few house-keeping ones of its own, but with the time taken to save or load files reduced to something like a tenth of time taken by the notoriously slow C2N.

In price and performance, tape cartridge systems fall between cassette recorders and disc drives. The Sinclair Microdrive and the Rotronics Wafadrive have shown what can be achieved at relatively low cost for the Spectrum microcomputer, both offering considerable increases in speed, etc.

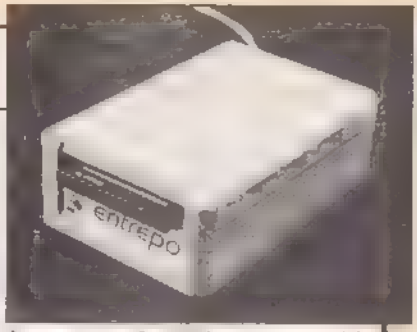
Entrepo Inc, the original American manufacturers of the wafer hardware used by Rototronics, are now offering a complete system for the Commodore machines. You would expect them to be able to get the most out of the hardware in terms of performance and value for money. Be prepared to have your expectations dashed.

Quick Data Drive comes with the drive itself, a manual, and a master tape cartridge (wafer) containing the operating system software. It is coloured to match the C64 and is cased in metal to meet the American laws on radio interference. A 1.8m lead plugs into the cassette port and there is a second part provided on the drive to let you add in your cassette or a further Quick Drive.

The manual is adequate and, in the usual American way, gives you a photograph to show how to plug the hardware in, but is no help at all in how to get the most out of the system.

To load the system software you must start up as if you were loading a program from cassette. From there on you can load files, save files, open sequential files, and verify stored files just as if you were using the C2N. Well, not quite; data transfer is much faster and you do not have to use fast forward/reverse. Also, as the Quick Drive software occupies 4K of memory (Vic 20 owners need at least 24K extra memory to use the full Quick Drive) many commercial programs cannot be run.

Also provided by Entrepo is a software utility which lets you copy program or sequential files between cassette and wafer or disc and wafer. With the 4K program you also get the commands necessary for formatting new wafers, reading a wafer contents, copying



the master wafer, and using a special wafer for cleaning the drive read/write heads. Using this program is full of frustrations until you get to know its shortcomings. Copying something from tape to wafer should be relatively simple, until something goes wrong. The cassette controls will not work once you have started to copy the file and thus you cannot rewind to have another go if, say, the wafer is too full to take the file.

After some hours use I decided that the Quick Data Drive hardware is excellent but let down by poor software. There is no facility to erase unwanted files, for example. Nor can you overwrite existing files. Without offering some of the facilities of a disc system it is difficult to see where the Quick Drive fits in.

I think that this American import needs further development before it could be given the Cochrane Approval Sticker.

John Cochrane

The writing's on the wall...

The introduction of MSX Basic has quite simply revolutionized the use of home computers. From today most of the languages in common use will fade into the brickwork.

Up until now home computers have used different machine languages, so that games and peripherals have been totally incompatible, but the introduction of MSX Basic will allow all products to run on any of these new machines. The implications are awesome.

Such a milestone in computer development deserves an equally innovative book. And not surprisingly it's published by Penguin.

MSX BASIC REVEALED gives the reader vital programming skills for MSX, and a detailed examination of its potential uses. It is one of the first books in the field and is certainly the very best.

When you realise that present day language systems have had their chips, you'll realise the need for MSX BASIC REVEALED.

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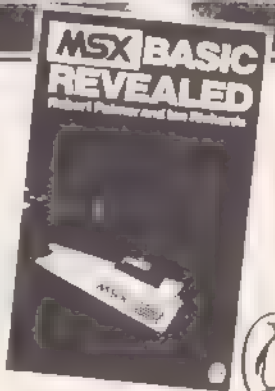


Big Bad Jake

Can you get Jake to Mexico in this cowboy classic for the Spectrum 48K by Peter Watson

Jake is getting ready for his holidays in Mexico but he is a a bit short of spending money. You have to help him 'borrow' $500 from the local bank without getting shot by the Sheriff.

Each time he reaches the front door of the bank $100 is collected, but this must be returned to Jake's hideout before it is his to keep. At first Jake can avoid the Sheriff fairly easily, but as more money is taken the more quick witted the Sheriff becomes. Jake has three lives. A status report is given at the bottom of the screen, ie, money collected and lives left. The controls are 5 = move left, 6 = move down, 7 = move up, and 8 = move right.

Program Notes

The program consists of a main play loop, ie, move Jake/Sheriff, with calls to other routines as the game progresses.

The following points should be noted:-

a) Extensive use is made of the *Attr* command. Any changes to colours used in the play area should be made with care; this applies also to the global *Ink* colour given in Line 3.

b) A total of 28 UDGs are required. 14 are set up initially to form the basic screen display; 12 more are set up prior to the commencement of the game proper to form characters required during play. Five of the initial set of characters are therefore overwritten in memory.

c) Line 20 determines the Sheriff's 'intelligence'. If the sum of the loot number (ie, 1 to 4) and the random number is less five the Sheriff will remain where he is for that cycle of the loop.

d) Enter the letters between quotation marks in Graphics Mode except where they form words.

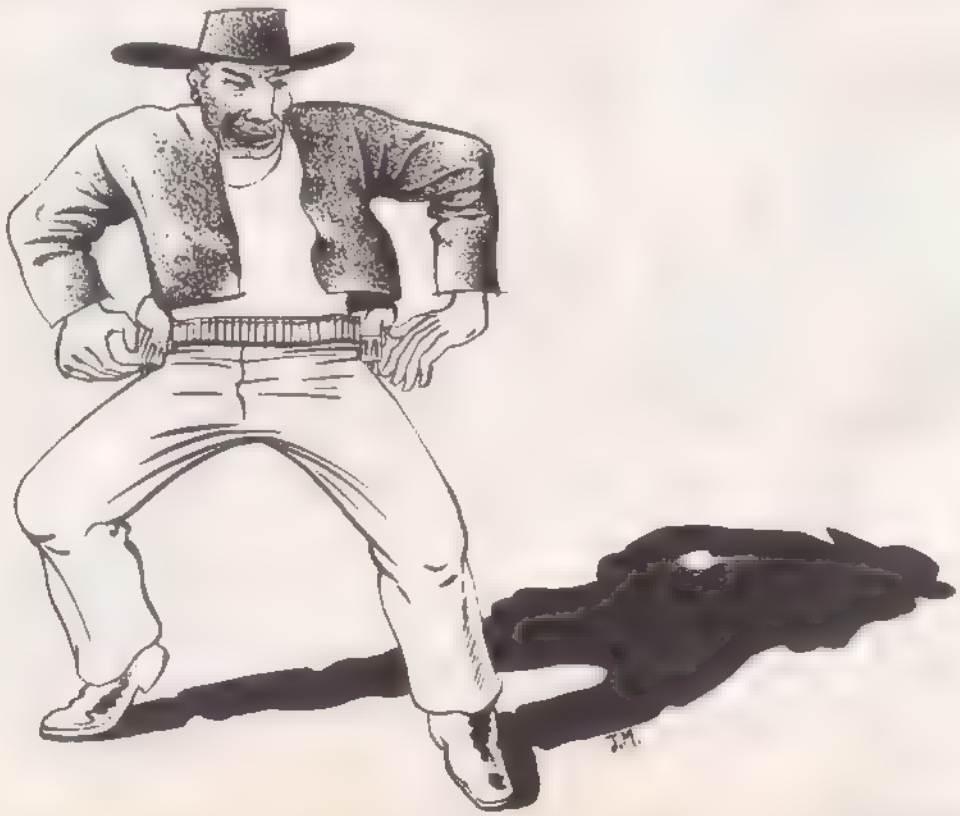
e) When all the listing has been entered and checked the program should be saved and verified by using *Goto 9000*.

Line No

3-10	Sub-routine calls, ie, title, instructions and graphics.
11-28	Main play loop.
100-110	Sheriff fires gun.
201-208	Lose a life.
300-306	Dead Jake/end of game.
500-506	Loot back to hide-out.
600-605	Win game.
700-702	Reprint bank, ie, to set bank to BRIGHT 1 or 0 depending on state of play.
1000-1013	Screen
2000-2008	Instructions
3000-3007	Title
4000-4012	Screen graphics
5000-5012	Play graphics
9000-9004	Save and verify game.

Variables

x,y	Co-ordinates of Jake's position.
p,q	Co-ordinates of Sheriff's position.
lives	Number of lives.
brt	Brightness of Jake and Bank.
loot	Loot number
dist	Distance between Sheriff and Jake.



```
   1 REM [redacted]
   2 REM [redacted]
   3 PAPER 0: INK 5: BORDER 5: C
LS
   4 GO SUB 3000: CLS
   5 GO SUB 5000: CLS
   6 GO SUB 4000
   7 BORDER 4: CLS : GO SUB 1000
   8 LET lives=3: LET bri=0: LET
 loot=0
   9 LET x=6: LET y=10
  10 LET p=21: LET q=10
  11 REM [redacted]
  12 LET z=x: LET b=y
  13 LET x=x-(INKEY$="5" AND x>0
 AND ATTR (y,x-1)<8 AND ATTR (y+
1,x-1)<8)+(INKEY$="8" AND y<20 A
ND ATTR (y,x-2)<8 AND ATTR (y+1,
x-2)<8)
  14 LET y=y-(INKEY$="7" AND y>0
 AND ATTR (y-1,x)<8 AND ATTR (y-
1,x+1)<8)+(INKEY$="6" AND y<20 A
ND ATTR (y+2,x)<8 AND ATTR (y+2,
x+1)<8)
  15 IF e(>x OR b(>y THEN PRINT
AT b,e;" ";AT b+1,e;" "
  16 PRINT AT y,x; INK 6; BRIGHT
 1;"LM";AT y+1,x;"MO"
  17 BEEP .01,58
  18 IF ATTR (y-1,x)=2 AND ATTR
(y-1,x+1)=2 THEN GO SUB 483
  19 IF x=6 AND y=10 AND bri THE
N GO SUB 581
  20 IF loot+INT (RND*7)<5 THEN
GO TO 28
  21 PRINT AT q,p;"  ";AT q+1,p;
"  "
  22 IF p>x AND ATTR (q,p-2)<8 A
ND ATTR (q+1,p-2)<8 THEN LET p=p
-1
  23 IF p<x AND ATTR (q,p+2)<8 A
ND ATTR (q+1,p+2)<8 THEN LET p=p
+1
  24 IF q>y AND ATTR (q-1,p)<8 A
ND ATTR (q-1,p+1)<8 THEN LET q=q
-1
  25 IF q<y AND ATTR (q+2,p)<8 A
ND ATTR (q+2,p+1)<8 THEN LET q=q
+1
  26 PRINT AT q,p; BRIGHT 1; INK
 4;"LM";AT q+1,p;"MO"
  27 IF y=q THEN GO SUB 181
  28 GO TO 18
 100 REM [redacted]
 101 IF p<x OR ATTR (q,p-1)<>8 O
R ATTR (q+1,p-1)<>5 OR ATTR (q,p
+2)<>8 OR ATTR (q+1,p+2)<>8 THEN
 RETURN
 102 IF p<x THEN GO TO 107
 103 IF p>x THEN LET dist=p-x: B
EEP .1,-10
 104 FOR b=1 TO dist-1
 105 PRINT AT q,p-b-1; INK 8;"w
"
 106 NEXT b: GO TO 201
 107 LET dist=x-p: BEEP .1,-10
 108 FOR b=1 TO dist-1
 109 PRINT AT q,p+b+1; INK 8;" w
"
 110 NEXT b: GO TO 201
 200 REM [redacted]
 201 PRINT AT y,x; INK 2; FLASH
1;"LM";AT y+1,x;"MO"
 202 BEEP .5,10: BEEP .8,10: BEE
P .1,0
 203 LET lives=lives-1: LET bri=
0
 204 GO SUB 701
 205 IF lives=0 THEN GO TO 301
 206 PRINT AT 0, PAPER 2; INK 7;AT
 1,14;lives
 207 PRINT AT y,x; INK 0;"[redacted]";AT
 y+1,x;"[redacted]";AT q,p;"[redacted]";AT q+1,p
;"[redacted]"
 208 PAUSE 88: GO TO 9
 300 REM [redacted]
 301 PRINT AT y,x; INK 7;"RB";AT
 y+1,x;"TU": PAUSE 88
 302 PAUSE 88: POKE 23606,8: IMP
UT "     Another Game? (Y/N) ";
 LINE z$
 303 IF z$="Y" THEN GO TO 8
 304 IF z$="N" THEN CLS : GO TO
300
 305 IF z$<>"Y" OR z$<>"N" THEN
GO TO 302
 306 PRINT '' INK INT (RND*7)+3;
 BRIGHT 1;TAB RND*14;"OK, SO LON
G GRINGO": POKE 23606,256: PAUSE
 5: GO TO 300
 400 REM [redacted]
 401 FOR t=0 TO 50 STEP 10
 402 BEEP .01,t
 403 NEXT t
 404 LET bri=1
 405 GO SUB 701
 406 RETURN
 500 REM [redacted]
 501 BEEP .1,10: BEEP .1,10
 502 LET loot=loot+1: LET bri=0
 503 GO SUB 701
 504 PRINT AT 0,3; PAPER 2; I
NK 7; loot*100
 505 IF loot=5 THEN GO TO 601
 506 RETURN
 600 REM [redacted]
 601 CLS
 602 FOR v=1 TO 3: FOR v=0 TO 7
 603 PRINT AT 8,7; BRIGHT 1; INK
 v;"U R L I   D O N E";AT 10,4;
INK v;"Jake is off on his holi
";" BEEP .01,9+v: BEEP .01,48-v: B
EEP .01,6+v
 604 NEXT v: NEXT v
 605 GO TO 300
 700 REM [redacted]
 701 PRINT AT 18,24; INK 7; BRIG
HT 1;"JK";AT 11,24;"GH"
 702 RETURN
1000 REM [redacted]
1001 FOR a=2 TO 18 STEP 4
1002 FOR b=8 TO 30 STEP 4
1003 PRINT AT a,b; INK 6;"EF";AT
 a+1,b;"GH": BEEP .01,b: BEEP .8
1004 NEXT b: NEXT a
1005 FOR b=8 TO 28 STEP 2
1006 PRINT AT b,8; INK 4; BRIGHT
 1;"IJIJIJ";AT b+1,8;"KLKLKL"
1007 NEXT b
1008 PRINT AT 10,4; INK 5;"RB";A
T 11,4;"TU"
1009 PRINT AT 10,24; INK 7;"MN";
AT 11,24;"GM"
1010 PRINT AT 8,AT 8,0; INK 5;"[redacted]
[redacted]";AT 7,7; INK 7;"[redacted]
[redacted]";AT 1,0;
[redacted]
 PAPER 1;"   JAKE   "
1011 PRINT AT 0,2; PAPER 2; I
NK 7;"Loot";AT 0,18;"Lives";AT 1
,2;"00";AT 1,14;"3"
1012 GO SUB 5000
1013 RETURN
2000 REM [redacted]
2001 PRINT AT 5,1; INK 4; BRIGHT
 1;"THE STORY SO FAR...";
2002 PRINT AT 5,0; INK 7;"Our fr
iend Jake is selling reservoir mi
x hole in Mexico but he's a bit
short of spending money..."
2003 PRINT AT 7,8; INK 7;"Can yo
u help him 'borrow' some from h
is local bank, without getting
 shot by the Sheriff!.."
2004 PRINT AT 11,8; INK 7;"Howev
er he must get his (not     back
 to his hideout for safe keepi
ng.."
2005 PRINT AT 18,0; INK 4; BRIGH
T 1;"Controls -"; INK 6; BRIGHT
 0;"
          7
          |
       6- -8
          |
          5"
2006 PRINT AT 1,0; PAPER 0; I
NK 6; FLASH 1;"     Press any ke
y to play"
2007 PAUSE 0: BEEP .3,38
2008 RETURN
3000 REM [redacted]
3001 PRINT AT 0,2; INK 3;"[redacted]"
[redacted]
[redacted]
[redacted]
```

Down in the dumps

Screen dumps for the CPC464 using the DMP 1 printer
*by **Anil Jagota***

This routine provides the CPC464 user with a method of reproducing the CPC464's screen display on paper using the DMP1 printer. If other printers are used the machine code will have to be modified for that particular printer.

The actual machine code was derived from the Basic program in Listing 1. The machine-code program has added advantages over the Basic program in that it is faster, more compact and offers more features. The features offered are double height, inverted output and abort. The machine-code version is approximately 150 times faster than the Basic version.

If you own a copy of Hisoft-Devpac then Listing 2 can by typed in and compiled. If not then Listing 3 can be typed in and run.

The finished program can be saved with the following: *Save filename ,B,43650,250*

If you have typed in Listing 3 then first *Save* the Basic program before running as mistakes may cause the computer to crash. After saving the program, it can be run.

When loading the program, firstly the memory must be set to *43649*; this can be done by *,Memory 43649*. To test the program simply type *Call 43650*. If the program has been typed in correctly then an exact copy of the screen will be on the printer.

To use the extra features a location called option (located at *43897*) in the program must be poked. This is done by the following line: *POKE 43897,x*. *x* is derived from the following table.

	0	1	2	3
DOUBLE HEIGHT	N	Y	N	Y
INVERTED	N	N	Y	Y

KEY: Y = yes N = no

To use the last feature, which is abort, simply press the space bar for a few seconds (while the program is running), and the program will return to Basic. The machine code program uses four of the CPC464's Rom routines the first being *Cra Test Absolute (&BBF0)*, the second *Mc Busy Printer (&BD2E)*, the third *Mc Print Char (&BD31)* and, finally, the fourth *Km Test Key (&BB1E)*.

Be sure to start each screen dump on a new sheet of paper as a whole sheet is used. Also after calling the routine, the printer will remain in graphics mode and no printing can be done by the printer before the following line is entered, *Print#8,Chr$(15)*.

Fig 1

```
10 REM SCREEN DUMP COPYRIGHT A.JAGOTA 1985
20 WIDTH 255
30 FOR x=0 TO 639 STEP 7
40 FOR y=0 TO 400
50 total=0
60 IF (TEST(x,y)MOD 2<>0) THEN total=total+1
70 IF (TEST(x+1,y)MOD 2<>0) THEN total=total+2
80 IF (TEST(x+2,y)MOD 2<>0) THEN total=total+4
90 IF (TEST(x+3,y)MOD 2<>0) THEN total=total+8
100 IF (TEST(x+4,y)MOD 2<>0) THEN total=total+16
110 IF (TEST(x+5,y)MOD 2<>0) THEN total=total+32
120 IF (TEST(x+6,y)MOD 2<>0) THEN total=total+64
130  PRINT#8,CHR$(27);CHR$(75);CHR$(0);CHR$(1);
CHR$(total);
140 NEXT y
150 PRINT#8,CHR$(13)
160 NEXT x
```

Fig 3

```
10 REM MACHINE-CODE SCREEN DUMP.
COPYRIGHT A.JAGOTA 1985
20 MEMORY 43649
30 LOCATION=43650
40 FOR X=0 TO 11
50 READ A$
60 FOR Y=1 TO 39 STEP 2
70 N$="&"+MID$(A$,Y,2)
80 POKE LOCATION,VAL(N$)
90 LOCATION=LOCATION+1
100 NEXT Y:NEXT X:END
110 DATA "CD28BD110000210000ED5373AB3E003272ABED5B"
120 DATA "73ABCD54ABCDF0BB110100CD64AB110200CD64AB"
130 DATA "110400CD64AB110800CD64AB111000CD64AB1120"
140 DATA "00CD64AB114000CD3EABCD2EBD38FBCD28BD3E1B"
150 DATA "CD28BD3E4BCD2BBD3E00CD2BBD3A79ABCB47280D"
160 DATA "3E02CD2BBD3A72ABCD2BBD18053E01CD2BBD3A72"
170 DATA "ABCD28BDCD5CAB2323CD54AB7CFE01C28FAA7DFE"
180 DATA "90C28FAA3E0ACD2BBD3E2FCD1EBBC02A73AB1107"
190 DATA "00192273AB210000CD54ABED5B73AB7AFE02C28F"
200 DATA "AA7BFEB4C28FAAC9473A79ABCB4F28010478CB47"
210 DATA "28072A72AB192272ABC92275ABED5377ABC92A75"
220 DATA "ABED5B77ABC9CD3EABCD5CAB13CD54ABCDF0BBC9"
```

Fig 2

```
10 ;MACHINE-CODE SCREEN DUMP COPYRIGHT A.MASOTA 1985
20         ORG  &9000
30         ENT  $
40 INIT    CALL &BC02          INITIALISE
50         LD   DE,H
60         LD   HL,0
70         LD   (FLAG),DE
80 LOOP    LD   A,H            MAIN LOOP
90         LD   (TEMP),A
100        LD   DE,(LOC)
110        CALL PUSHER
120 KITO   CALL &BB1F            TEST for SP
130        LD   C,1
140 BIT1   CALL &BD19            TEST for bit 0 of (LOC)
150        LD   C,2
160 BIT2   CALL &BD19            TEST for bit 1 of (LOC)
170        LD   C,4
180 BIT3   CALL &BD19            TEST for bit 2 of (LOC)
190        LD   C,8
200 BIT4   CALL &BD19            TEST for bit 3 of (LOC)
210        LD   C,16
220 BIT5   CALL &BD19            TEST for bit 4 of (LOC)
230        LD   C,32
240 BIT6   CALL &BD19            TEST for bit 5 of (LOC)
250        LD   A,64
260        CALL &BD1C
270 PRINT  CALL &BB2A            TEST CENTRONICS PORT
280        JP   Z,PRINT
290        CALL &BB06
300 RETN   JP   NC,RETN          IF NOT BUSY THEN OUTPUT
310        LD   A,27                 CHARACTERS
320        CALL &BB5A
330        LD   A,75
340        CALL &BB5A
350        CALL &BB5A
360 DOUBLE LD   A,(FLAG)         IS DOUBLE PRINT TRUE
370        CALL &BB06
380        JR   Z,NORMAL
390        LD   A,71
400        CALL &BB5A
410        JR   PRINT
420 NORMAL LD   A,72             IF NORMAL PRINT ONCE
430        CALL &BB5A
440 PRINT  LD   A,(TEMP)
450        CALL &BB5A
460 TEST   CALL &BB1B            NEXT
470        INC  HL               LOCATION
480        INC  H
490        CALL PUSHER
500        LD   A,H
510        CP   &A0              IF = &A0 THEN REPEAT
520        JP   NZ,LOOP
530        LD   A,L
540        CP   &FF
550        JP   NZ,LOOP
560        LD   A,H
570        CALL &BB5A
580        RET
590 PUSHER LD   B,H              IF OPTION SET TO INVERT
600        LD   A,(OPTION)
610        BIT  1,H
620        JR   Z,NORMAL
630 INVERT DEC  B                IF YES THEN INVERT
640        JR   Z,NORMAL         IF NO THEN NORMAL
650        BIT  0,H
660        JR   Z,FIN
670        LD   A,(TEMP)
680        ADD  A,L
690 FIN    RET
700 FLAG   DEFB 0                SUBROUTINE TO SAVE
710 TEMP   DEFB 0                   HL & DE
720 LOC    DEFW 0
730 OPTION DEFB 0
```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Screen store

Macros explained in the first part of ***Adrian Warman's*** *Screen Bank program*

One of the first things that a newcomer to the world of machine code programming encounters is a whole new range of jargon words, such as 'Assembler', or 'Relative and Absolute', and many others. However, one jargon word that is frequently overlooked or skimmed past by any introductory text is that of the Macro and its companion, the Macro-Assembler. Even the more advanced text books tend to refer to Macros in such terms as '. . . like subroutines, but with the code duplicated each time the routine is used. . . .'

In a sense this description is accurate, but does tend to leave the reader with a feeling that Macros are of little use. After all, why use Macros (which may take up loads of memory space), if they are just the same as ordinary subroutines? The answer lies in the fact that Macros are *not* the same as subroutines as far as the Assembler is concerned.

It may be easier at this point to consider an analogy. Most powerful languages, such as Comal and Pascal, allow the programmer to define 'Procedures', which enable top-down or 'structured' programming. In the machine code world, a good assembler (which corresponds to the powerful high level language program) will allow you to define Macros. (Hence a 'Macro-Assembler' is simply an Assembler that allows you to define Macros.) Surprising as it may seem, it is possible to define a sufficient number of Macros to make machine code programming easier than writing an equivalent program in a more general high-level language. Taken with the great advantage of very much faster execution speeds. Macros provide an even greater incentive for micro-computer owners to learn machine code when writing *any* programs; not just games, but also that accounts program they were always intending to get around to.

This article contains a program which demonstrates and uses Macros, called PBank. But first let us try to define exactly what a Macro is.

From the purely machine code point of view, a minimal definition of a Macro is 'a separate piece of code that can be duplicated at will throughout the main program'. What does this mean? A simple example should make things a little clearer. Given that the programmer types in the following (meaningless!) source code:

```
.mac silly; defines the Macro.
lda #$00
sta $ffff
.mnd; end of the Macro.
;
;
main ldx #$00; the main program.
silly; use the macro here . . .
idy #$00
silly; . . and here.
rts
```

When this source code is run through a Macro-Assembler, the code will be read by the Macro-Assembler as if the programmer had actually typed in:

```
main ldx #$00; the main program.
lda #$00; use a macro here . . .
sta $ffff
idy #$00
lda #$00; . . and here.
sta $ffff
rts
```

This particular example in fact shows the reason why novice programmers tend to avoid Macros. It is perfectly correct that in this example the coding would have been made more efficient by using normal subroutines. So, again we ask . . . Why use Macros?

More obvious reasons why may include the fact that the subroutine stack simply could not hold another return address, or that too much time would be taken to perform the subroutine call and then to return. However, the best reason revolves around the simple fact that we have not fully defined what a Macro is.

Earlier, it was stated that there is a correspondence between high-level 'Procedures' and Macros. Almost invariably, procedures can have 'parameters' passed into them, which can then optionally be modified by the procedure. In the same way, Macros can *also* have parameters, although the degree and manner in which they are used differs slightly from high-level procedures. Unfortunately, the method of implementing parameters in Macros is by no means standardised, a problem made worse by the comparative rarity of Macro-Assemblers themselves. For the purpose of this article, the excellent Commodore 'Macro Assembler Development System' is used. In this package, a Macro may have up to 9 (numeric) parameters, designated as *?1* to *?9* inclusive.

When a parameter has been defined for a particular Macro, it can then be used anywhere within the Macro. However, unlike high-level procedures, the Macro parameters cannot be modified upon return to the main source code.

How are parameters implemented? The CBM Macro-Assembler assumes that parameters *always* exist. Whether you use them or not is entirely up to you. As a result, the Macro definition itself does not need to be told that there are parameters, it simply uses them if told to do so. In the main program however, the parameters must be defined if they are going to be used. A simple example would be as follows:

```
1000 REM BASIC LOADER FOR PBank. PROGRAM.
1010 :
1020 REM By A.WARMAN
1030 :
1040 RUDRE"6=49152"
1050 SUM=0
1060 :
1070 FOR LOC=ADDRESS TO ADDRESS+276
1080  READ DATUM
1090  POKE LOC,DATUM
1100  SUM=SUM+DATUM
1110 NEXT LOC
1120 :
1130 IF SUM<>27449 THEN PRINT "Sum Error.":
1140 :
1150 STOP
1160 :
1170 DATA  76,  48,192,  76,  23,192,   0,   0,   0,   0,   0,   0,   0,   0,   0,  0
1180 DATA 160,   0,168,   0,176,   0,184,169,   0,160,   6,153,   6,192,136,  16
1190 DATA 250,173,136,   2,141,  14,192,238,   6,192, 96,162,  21,  76,  50,164
1200 DATA  32,211,192,162,  11,192,189,   6,192,240,   6,  32,211,192,236,  11
1210 DATA 192,240,232,189,   6,192,  9,   1,157,   6,192,136, 208,170,141,  12
1220 DATA 192,192,  13,192,133,253,184,  14,192,  24,105,   0,133,254,173,  11
1230 DATA 192,  10,170,141,  11,192,189,  33,192,133,251,189,  14,192,  24,105
1240 DATA   0,133,252,138,165,   1,  41,254,133,   1,  32,192,192,174,  11,192
1250 DATA 240,  15,189,  15,192,133,251,189,  14,192,  24,105,   0,133,252,144
1260 DATA   8,169,   0,133,251,169,216,133,252,174,  12,192,240,  15,189,  13
1270 DATA 192,133,253,189,  14,192,  24,105,   4,133,254,144,   8,169,   0,133
1280 DATA 253,169,216,133,254,  32,192,192,165,   1,  9,   1,133,   1,  88,  96
1290 DATA 162,   4,160,   0,177,251,145,253,200,208,249,230,252,230,254,202
1300 DATA 208,242,  96,  32,253,174,  32,158,183,224,   5,144,   5,162,  14,  76
1310 DATA  55,164,  96
```

```
.mac poke; define the macro
ida #?2; ?2 first parameter
sta ?1; ?1 first parameter
.mnd
;
;
main  poke  53280,0;  a  valid
command!
poke 53281,0; screen blacks out
pole 646,5; text becomes green
rts
```

This is quite a fascinating example. Simply by defining the Macro under the name *Poke*, we have created an exact, *working* machine code equivalent for the Basic command *Poke*. Even better, it is used in the source code in *exactly* the same way as the genuine Basic command.

Suddenly, a vast new range of options becomes open to you, simply by creating the new 'commands' that you want. In addition, Macros can usually be nested (just like subroutines) – although on the CBM Macro-Assembler the nesting cannot exceed eight levels.

It must still be admitted that each time the Macro is used, a certain amount of the Macro *is* duplicated (although when parameters are used, this effect is minimised). However, with machines today having up to 64K of memory (such as the CBM 64), memory restrictions are no longer the main impediment to programmers. Furthermore, because the code is placed directly into the main program in sequence, it tends to be a little faster than using subroutines. In addition, each Macro can be defined and tested individually (just like procedures). If it works once, it will always work. Finally, by defining more powerful Macros, a whole machine-code 'command language' can be built up, which reduces the time to write machine-code programs by a staggering factor, and will also reduce the number of errors, and even the time to debug the final program.

This program (PBank) provides the standard CBM 64 computer with the ability to hold a 'bank' of main screen displays. At any time, the currently displayed main screen may be copied to one of the storage screens. If a particular storage screen has some valid data in it, the data can be copied to either another storage screen, or back to the main screen. In all cases, regardless of where a screen is moving to, it will completely overwrite whatever was present before the move. Four storage screens are provided, and each will also hold the correct colour data, so that the display will be returned exactly as it was when stored. However, the cursor position is *not* stored or altered, since this is not always desirable. It may be advisable to print a 'Home' character whenever a storage screen is moved to the main screen so that you always know where the cursor is.

The routine is loaded by entering and executing the supplied Basic loader program. This places the machine code routines into the spare memory from $c000 onwards. To prepare the storage banks to accept and transfer copies of the main screen, perform a *Sys 49155* command in either program or direct mode. This will reset the data flags. In addition, using this command can be used to reset the complete set of storage screens, while leaving the main screen unaltered. If at any time the position of the main screen in memory should alter, the program must be re-initialised in the manner described, as otherwise any attempt to copy data from a storage screen back to the main screen will not appear or even worse will overwrite an area of memory.

In order to copy a screen from one store to another (or to-and-from the main screen), the command *Sys 49152,from,to* – is used, again in either program or direct mode. The main screen is referred to as screen number 0 (zero), and there are four storage screens numbered 1 (one) to 4 (four) inclusive. Any attempt to access a screen using a number outside of the range 0 to 4 inclusive will produce an illegal quantity error. *From* is the screen number that is used to supply the data, and *to* is the number of the screen that the data is placed into. It is impossible to transfer from one screen back into the same screen in one command.

Thus, *Sys 49152,0,1* will copy from the main screen to storage screen number one. Similarly, *Sys 49152,3,0* will copy storage screen number three back onto the main screen. Finally, *Sys 49152,2,4* would copy storage screen two to screen four, but *only* if valid data has already been placed in screen two. Once valid data has been placed into a given storage screen, then that screen can be used as the *from* screen. Initialising the program by the *Sys 49155* command will reset the flags in the program to indicate that there is no data in any of the storage screens.

Part Two will appear in Vol 4 No 9

```
00001  0000          a=$c000
00002  c000          ;
00003  c000          ;screen storage bank.
00004  c000          ;
00005  c000          ;by a.warman
00006  c000          ;
00007  c000          ;
00008  c000          ;define additional command.
00009  c000          ;
00010  c000          .mac   vec
00011  c000          lda    screen,x
00012  c000          sta    ?1
00013  c000          lda    screen+1,x
00014  c000          clc
00015  c000          adc    #?2
00016  c000          sta    ?1+1
00017  c000          .end
00018  c000          ;
00019  c000          ;
00020  c000          ;define system locations.
00021  c000          ;
00022  c000          chipio=$0001
00023  c000          source=$00fb
00024  c000          dest=$00fd
00025  c000          hibase=$0288
00026  c000          tstcom=$aefd
00027  c000          getbyt=$b79e
00028  c000          errmsg=$a437
00029  c000          ;
00030  c000          ;
00031  c000          ;define easy-to-use jump table.
00032  c000          ;
```

```
00033  c000  4c 30 c0     start   jmp copy
00034  c003  4c 17 c0     jmp     init
00035  c006                ;
00036  c006                ;
00037  c006                ;storage locations.
00038  c006                ;
00039  c006  00            pagusd .byte $00        ;page zero (screen).
00040  c007  00            .byte  $00              ;page one.
00041  c008  00            .byte  $00              ;page two.
00042  c009  00            .byte  $00              ;page three.
00043  c00a  00            .byte  $00              ;page four.
00044  c00b  00            from   .byte $00        ;index to source.
00045  c00c  00            to     .byte $00        ;index to destination.
00046  c00d                ;
00047  c00d                ;
00048  c00d                ;address vectors for page storage.
00049  c00d                ;
00050  c00d  00 00         screen .word $0000
00051  c00f  00 a0         page1  .word $a000
00052  c011  00 a8         page2  .word $a800
00053  c013  00 b0         page3  .word $b000
00054  c015  00 b8         page4  .word $b800
00055  c017                ;
00056  c017                ;initialisation routine.
00057  c017                ;
00058  c017  a9 00         init   lda #$00         ;clear out data-store.
00059  c019  a0 06         ldy    #to-pagusd
00060  c01b  99 06 c0      lloop  sta pagusd,y
00061  c01e  88            dey
00062  c01f  10 fa         bpl    lloop
00063  c021  ad 88 02      lda    hibase           ;find current screen position.
00064  c024  8d 0e c0      sta    screen+1
00065  c027  ee 06 c0      inc    pagusd           ;show main screen used.
00066  c02a  60            rts
00067  c02b                ;
```


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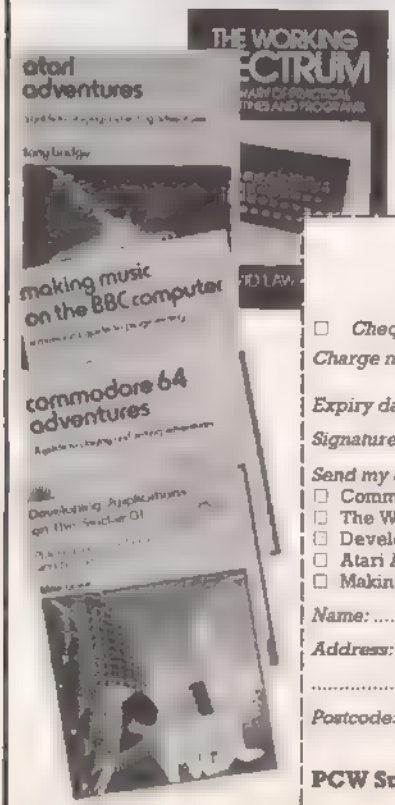

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In black and white

A version of the classic game Othello for the QL by ***Malcolm Scorer***

Othello is an ancient board game which fairly recently has become quite popular. Perhaps the main reason for this popularity is the fact that it's a very easy game to learn. The game is played by two players on a board with 64 squares (8 * 8), each player having a set of pieces or discs, coloured white on one side and black on the reverse.

The object of the game is to capture as many pieces as possible; this is achieved by 'trapping' one or more of your opponent's discs between two of your own, those 'trapped' in this way are then turned over and become yours. Your opponent (in this case the computer) then takes his turn and tries to do likewise. The winner is the one who, at the end of the game, ie, when all the squares are filled or no-one can move, has the most discs.

You play white and the computer plays black; white moving first. Moves are entered as a two digit number corresponding to the row and column of the square you wish to place your disc, eg, row 1 and column 1, you type *'11'* and then *'ENTER'*.

After checking for a valid move, your disc will be drawn in the correct square and all trapped discs turned over. The score will then be updated and the computer will make its move. If during the course of the game you are unable to move then you must miss a turn. To do this, type *'s'* and *'ENTER'* and the computer will then make another move. If the computer is unable to move, a message will be displayed on the screen and you may then move again.

Throughout the game a score is kept of the number of discs each player has, displayed on the right-hand side of the screen and is updated after each player's move.

Program notes

Line No

220-340 *Game.* This is the main control loop.

370-580 *Play.* Scans the game board in all directions around the selected square checking the move is valid, if it is the disc is drawn in that square and all trapped discs turned over.

610-880 *Init.* Initialises variables, sets up the windows and draws the game board.

900-950 *Mov(x$).* Draws a game disc at row, column held in x$.

960-1210 *Keyin.* Reads keyboard for players move, checks for correct input range and that the square is empty before calling *Play* procedure.

1240-1400 *Computer.* Performs computers move by cycling through data table looking for a valid move and then calling play procedure.

1430-1470 *Data.* Table of values used by *Computer* procedure.

1500-1860 *Errmess.* Prints error message and then removes the incorrectly placed disc from the board.

1890-1620 *Swap.* Computer unable to move message.

1650-1800 *Score.* Keeps and prints the current score for both players. Also checks for a full board which indicates the end of the game.

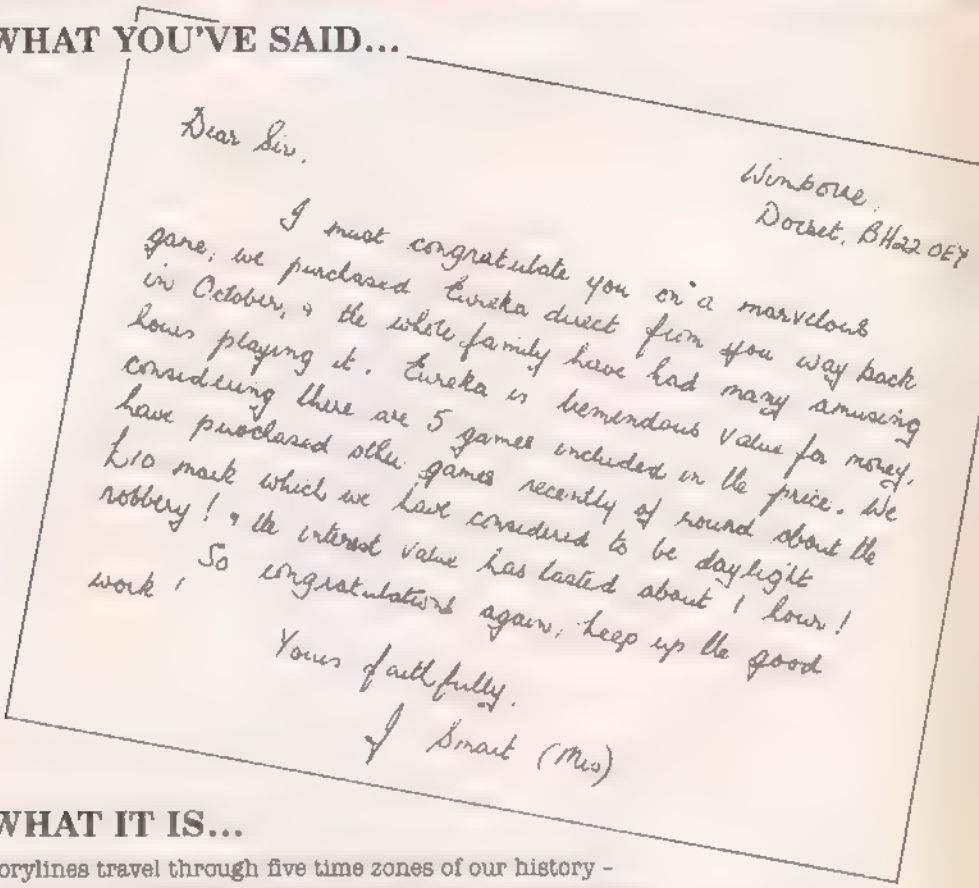
1830-1900 *Done.* Prints 'game over' and gives option to play again.

```
 10REM************************************
 20REM*******   MATRICES   ********
 30REM*******    BY ME     ********
 40REM************************************
 50MODE4
 60CLEAR
 70VDU19,1,3;0;
 80VDU23,244,0,254,254,254,254,254,254,0,0
 90VDU23,245,0,255,255,255,255,255,255,0,0
100VDU23,0,8202,68
110NO$=MAT=0
120ROW2%=1:COL2%=1
130:
140ONERROR GLS:PRINTTAB(14,14);"E R R O R":SOUND1,-8,233,4:
A=INKEY(150)
150PROC_START
160:
170DEFPROC_START
180:
190VDU19,1,3;0;
200CLS
210VDU31,13,1;PRINT
220VDU31,15,2;PRINT"MATRICES"
230PRINTTAB(13,3);STRING$(12,CHR$244)
240:xcord=7:Ycord=7
250VDU31,Xcord,Ycord;PRINT"1. Enter matrices."
260VDU31,Xcord,Ycord+1;PRINT"2. Multiply."
270VDU31,Xcord,Ycord+2;PRINT"3. Add."
280VDU31,Xcord,Ycord+3;PRINT"4. Subtract."
290VDU31,Xcord,Ycord+4;PRINT"5. Transpose."
300VDU31,Xcord,Ycord+5;PRINT"6. Save matrix."
310VDU31,Xcord,Ycord+6;PRINT"7. Load matrix."
320VDU31,Xcord,Ycord+7;PRINT"8. End."
330VDU31,Xcord-2,Ycord+10;PRINT"Escape to return to menu"
340a=FX15,0
350VDU31;Xcord,VPOS-3;PRINT" Enter Choice ";:VDU31,Xco
rd+20,VPOS-1);:INPUT""CHOICE$
360VDU19,1,7;0;
370IF CHOICE$="1" THEN PROCMATRIX
380IF CHOICE$="2" THEN PROC_MULTIPLY(NO$=MAT)
390IF CHOICE$="3" THEN PROCADD(ROW1%,COL1%)
400IF CHOICE$="4" THEN PROCSUBTRACT(ROW1%,COL1%)
410IF CHOICE$="5" THEN PROC TRANSPOSE(ROW1%,COL1%,ROW2%,COL
2%)
420IF CHOICE$="6" THEN PROC_SAVE(ROW1%,COL1%,ROW2%,COL2%,NO
$=MAT)
430IF CHOICE$="7" THEN PROC_LOAD
440IF CHOICE$="8" THEN CLS:PRINTTAB(12,12)" B Y E ":END
450GOTO190
460REM>PROC
470REM*************************************
480DEFPROCMATRIX
490REM*************************************
500REPEAT
510REPEAT
520VDU19,1,8;0;
530CLS
540PRINTTAB(12,1);" MATRIX ENTRY "
550PRINTTAB(12,2);STRING$(14,CHR$244)
560VDU31,0,4:INPUT" ONE OF TWO MATRICES ";NO$=MAT
570UNTIL NO$=MAT$ OR NO$=MAT$=2
580VDU31,0,6:INPUT" SIZE OF MATRIX ONE ( ROW BY COL) ";ROW1
%,"" BY ";COL1%
590IF COL1%<1 OR ROW1%<1 THEN SOUND1,-12,283,10:PRINTTAB(12
,12);" Silly !!!":PRINTTAB(12,28);"PRESS ANY KEY":A=GET
600UNTIL ROW1%>0 AND COL1%>0
610DIM MATRIX1(ROW1%,COL1%)
620DIM ADD(ROW1%,COL1%)
630DIM MIN(ROW1%,COL1%)
640:
650PROC_ENTRY(ROW1%,COL1%,1)
660:
670IF NO$=MAT$=1 THEN ENDPROC
680REPEAT
690CLS
700VDU31,0,9:INPUT" SIZE OF MATRIX TWO ( ROW BY COL) ";ROW2
%,"" BY ";COL2%
710IF ROW2%<1 OR COL2%<1 THEN PRINTTAB(12);" END I Can t
do that ":PRINTTAB(13,28);"PRESS ANY KEY":A=GET
720UNTIL ROW2%>1 AND COL2%>1
730PROC_CHECK(ROW1%,COL1%,ROW2%,COL2%)
740DIM MATRIX2(ROW2%,COL2%)
750DIM MUL(ROW1%,COL2%)
760:
770PROC_ENTRY(ROW2%,COL2%,2)
780DIM MATTRAN(COL1%,ROW1%)
790DIM MATTRAN2(COL2%,ROW2%)
800:
810ENDPROC
820REM*************************************
830DEFPROC_ENTRY(ROW,COL,matrix$)
840REM*************************************
850CLS
860VDU31,3,0:PRINT" Entry of matrix "matrix$" (ROW BY C
OL)
870PRINTTAB(0,1);STRING$(38,"_")
880FOR I=1 TO ROW
890YCORD=(I+1)*3
900FOR J=1TO COL
910XCORD=(J-1)*7
920VDU31,XCORD,YCORD
930 IF matrix$=1 THEN INPUT""MATRIX1(I,J) ELSE INPUT""MATRI
X2(I,J)
940NEXTJ
950NEXTI
960PRINTTAB(12,VPOS+4);" O.K. ?";:VDU31,23,VPOS-1;A$=GET$
970IF A$="N" OR A$="n" THEN CLEAR :PROCMATRIX
980ENDPROC
990REM*************************************
1000DEFPROC_MULTIPLY(NO$=MAT)
1010REM*************************************
```

```
1600:CLS
1610PROC_ MECH(RO%1%,CO1%,RO%2%,CO2%)
1620:CLS
1630VDU31,5,2:PRINT " MULTIPLYING (1% ) BY ( %)ORDER) "
1640PRINTTAB(4,3);STRING$(22,CHR$(244))
1650IF RO%=MA1=1 OR RO%=MA1=1 THEN PRINTTAB(10,12      %01 "
1660:BEEP "SOUND1,-15,25,2:A=GET:PROC_START
1670:
1680:
1690FOR I=1TO RO%1%
1700FOR J=1TO CO1%
1710FOR K=1TO CO1%
1720MUL(I,J)=MATRIX1(I,J)*MATRIX2(I,J)+MUL(I,J)
1730NEXT
1740PRINTTAB(I+5,J+5);(MUL(I,J)/100)
1750NEXT J
1760NEXT I
1770:
1780PRINTTAB(12,28)"PRESS ANY KEY":A=GET
1790ENDPROC
1800REM**********************************
1810DEFPROCADD(RO,CO)
1820REM**********************************
1830PROC CHEC(ROW1%,COL1%,ROW2%,COL2%)
1840:
1850:CLS
1860PRINTTAB(5,0)"**********"
1870PRINTTAB(5,1)" ADDITION "
1880PRINTTAB(15,2)"** ******"
1890:
1900VDU5
1910FOR I=1 TO RO
1920FOR J=1 TO CO
1930ADD(I,J)=MATRIX1(I,J)+MATRIX2(I,J)
1940C=J*180
1950MOVE C,700-I *PRINTADD(I,J)
1960MOVEO,0
1970NEXT J
1980 D=I*140
1990NEXT I
2000VDU4
2010PRINTTAB(13,0)"PRESS ANY KEY":A=GET
2020ENDPROC
2030REM**********************************
2040DEFPROCSUBTRACT(RO,CO)
2050REM**********************************
2060:CLS
2070FOR I=1 TO RO
2080FOR J=1 TO CO
2090MIN(I,J)=MATRIX1(I,J)-MATRIX2(I,J)
2100C=J*180
2110MOVE C,700-D *PRINTMIN(I,J)
2120MOVEO,0
2130NEXT J
2140 D=I*140
2150NEXT I
2160VDU4
2170PRINTTAB(13,28)"PRESS ANY KEY":A=GET
2180ENDPROC
2190REM**********************************
2200DEFPROC_SAVE(RO,CO,RO2,CO2,NO$=MATRICES)
2210REM**********************************
2220REPEAT
2230CLS
2240VDU31,8,2:PRINT" SAVE MATRIX TO DISC "
2250PRINTTAB(5,8);STRING$(29,CHR$245)
2260PRINTTAB(10,8);" PLEASE ENTER FILE-NAME (MAX 3 LETTER) "
2270VDU31,12,12:PRINT"---"
2280VDU31,12,11:INPUT"FILENAME$
2290IF LEN(FILENAME$)>3 THEN PRINTTAB(2,28);"FILENAME MUST
 BE LESS THEN 3 LETTERS ":SOUND1,-12,200,2:A=INKEY(300)
2300UNTIL LEN(FILENAME$)<=3
2310:
2320REM**********************************
2330REM      SAVE DIM FOR MATRIX 1
2340REM**********************************
2350A=OPENOUT(FILENAME$+"DIM1")
2360PRINT#A,RO,CO,NO$=MATRICES
2370CLOSE#A
2380REM-------------------------------
2390REM      SAVE MATRIX 1
2400REM-------------------------------
2410A=OPENOUT(FILENAME$+"MAT1")
2420FOR I=1TO RO
2430FOR J=1TO CO
2440PRINT#A,MATRIX1(I,J)
2450NEXT J
2460NEXT I
2470CLOSE#A
2480REM-------------------------------
2490IF NO$=MATRICES$<>2 THEN 2120
2500REM--  -------------------------
2510REM   SAVE DIM FOR MATRIX 2
2520REM-------------------------------
2530A=OPENOUT(FILENAME$+"DIM2")
2540PRINT#A,RO2,CO2
2550CLOSE#A
2560REM-------------------------------
2570REM   SAVE MATRIX 2
2580REM-------------------------------
2590A=OPENOUT(FILENAME$+"MAT2")
2600FOR I=1TO RO%2
2610FOR J=1TO CO%2
2620PRINT#A,MATRIX2(I,J)
2630NEXT J
2640NEXT I
2650CLOSE#A
2660:CLS
2670PRINTTAB(13,27)"SAVE  COMPLETED";'TAB(13);" PRESS ANY
 KEY"
2680A=GET
2690ENDPROC
2700REM**********************************
2710DEFPROC_LOAD
2720REM**********************************
2730:CLS
2740VDU31,12,2:PRINT" LOADING MATRIX "
2750PRINTTAB(9,3);STRING$(20,"-")
2760:
2770VDU31,0,5:INPUT" ENTER NAME GIVEN TO FILE  >> "FILENAME$
2780REM
2790REM      LOAD DIM FOR MATRIX1
2800REM-------------------------------
2810A=OPENIN(FILENAME$+"DIM1")
2820INPUT#A,rows,columns,amount
2830PRINT
2840PRINT"ROWS-";rows;" COLUMNS-";columns;"  NO. OF MATRIC
ES ";amount
2850CLOSE#A
2860DIM MATRIX1(rows,columns)
2870DIM ADD(rows,columns)
2880DIM MIN(rows,columns)
2890DIM MATTRAN1(rows,columns)
2900ROW1%=rows:COL1%=columns
2910PRINT
2920REM-------------------------------
2930REM      LOAD MATRIX 1
2940REM-------------------------------
2950F=OPENIN(FILENAME$+"MAT1")
2960FOR A=1TO rows
2970FOR B=1TO columns
2980INPUT#F,MATRIX1(A,B)
2990PRINT;MATRIX1(A,B);",";
3000NEXT
3010PRINT:PRINT
3020NEXT
3030CLOSE#F
3040PRINT"           PRESS  ANY KEY"
3050A=GET
3060 IF amount<>2 THEN ENDPROC
3070REM-------------------------------
3080REM      LOAD DIM FOR MATRIX2
3090REM-------------------------------
3100F=
3110A=OPENIN(FILENAME$+"DIM2")
3120INPUT#A,row2,column2
3130PRINT
3140PRINT"ROWS-";row2;"  COLUMNS-";column2
3150CLOSE#A
3160DIM MATRIX2(row2,column2)
3170DIM MUL(rows,column2)
3180DIM MATTRAN2(row2,column2)
3190ROW2%=row2:COL2%=column2
3200IF NO$=MAT=2
3210PRINT
3220REM-------------------------------
3230REM      LOAD MATRIX2
3240REM-------------------------------
3250F=
3260A=OPENIN(FILENAME$+"MAT2")
3270FOR B=1TO row2
3280FOR C=1TO column2
3290INPUT#F,MATRIX2(B,C)
3300PRINT;MATRIX2(B,C);",";
3310NEXT
3320PRINT:PRINT
3330NEXT
3340CLOSE#F
3350PRINTTAB(13,28);" PRESS ANY KEY "
3360A=GET
3370ENDPROC
3380REM**********************************
3390DEFPROC_TRANSPOSE(RW,CL,RW2,CL2)
3400REM**********************************
3410REPEAT
3420CLS:D=0
3430REPEAT
3440PRINTTAB(12,1);" TRANSPOSE "
3450PRINTTAB(12,2);STRING$(11,CHR$245)
3460VDU31,0:INPUT"Which matrix do you wish to TRANSPOSE  "ANS
3470UNTIL ANS=1 OR ANS=2
3480IF ANS=1 THEN RW=RW AND CL=CL ELSE RW=RW2 AND CL=CL2
3490REM  IF ANS=1 THEN DIM MATTRAN(CL,RW) ELSE DIM MATTRAN
(CL2,RW2)
3500VDU5
3510FOR I=1 TO RW
3520FOR J=1 TO CL
3530 IF ANS=1 THEN MATTRAN1(J,I)=MATRIX1(I,J) ELSE MATTRAN2
(J,I)=MATRIX2(I,J)
3540C=J*80
3550MOVEC+100,650-D:IF ANS=1 THEN PRINT;MATTRAN1(J,I)  ELSE
PRINT;MATTRAN2(J,I)
3560NEXT J
3570 C=I*140
3580 D=I*140
3590NEXT I
3600VDU4
3610PRINTTAB(13,28)"PRESS ANY KEY"
3620A=GET
3630ENDPROC
3640REM **********************************
3650REM *    ERROR  DETECTION      *
3660REM **********************************
3670DEFPROC_CHEC(R1,C1,R2,C2)
3680CLS
3690IF R1<> R2 OR C1<>C2 THEN PRINTTAB(2,20);" ADDITION & SU
BTRACTION NOT POSSIBLE":A=GET:IF C1<> R2 THEN PRINTTAB(2,17)
;" MULTIPLICATION  NOT  POSSIBLE  WITH INITIAL MATRICES.":
A=GET
3700:
3710ENDPROC
```

Eureka!

HERE'S WHAT YOU'VE SAID...



Dear Sir,

Wimborne,
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I must congratulate you on a marvelous game; we purchased Eureka direct from you way back in October, & the whole family have had many amusing hours playing it. Eureka is tremendous value for money, considering there are 5 games included in the price. We have purchased other games recently & round about the £10 mark which we have considered to be daylight robbery! & the interest value has lasted about 1 hour! So congratulations again; keep up the good work!

Yours faithfully,

J Smart (Mrs)

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Cross references

Be no longer muddled by matrices after typing in this program for the BBC by ***S Alg***

Here is a program that allows the addition, subtraction, multiplication or transposition of two matrices, which themselves may be saved or loaded via a file. Its main objectives, however, are to show how a menu-driven program can be quite easily implemented, and how data can be saved and loaded on tape. The structure of the program is self-explanatory, using meaningful names and identifiable procedures.

Program Notes

Procmatrix	– Initialises the matrices
Procentry	– Entry of the matrices
Procmultiply	– Multiplication of the matrices
Procadd	– Addition of the same
Procsubtract	– Subtraction of matrices

```
100 CLEAR
10 DIM board(99),a(8)
20 left=60:cflag=0
30 init
40 score
50 REPeat game
60 player1=1:player2=2
70 color=7
80 keyin
90 IF valid THEN
00   score
10   player1=2:player2=1
20   computer
30 ELSE
40   errmess
50 END IF
60 END REPeat game
70 STOP
80 :
90 :
00 DEFine PROCedure play
10 valid=0
20 FOR rd=0 TO 7
30  check=a(rd):ofset=1
40  REPeat loop
50   direct=key+(ofset*check)
60   IF board(direct)= player2 THEN EXIT loop
70   ofset=ofset+1
80  END REPeat loop
90  IF board(direct)= player1 THEN
00   REPeat loop1
10   ofset=ofset-1
20   direct=key+(ofset*check)
30   IF board(direct)= player1 THEN EXIT loop1
40    IF cflag THEN cflag=0:mov key$
50    board(direct)= player1
60    LET d$=direct:mov d$
70    valid=1
80   END REPeat loop1
90  END IF
00 END FOR rd
10 END DEFine
20 :
30 :
40 DEFine PROCedure init
50 PAPER £0,5:INK £0,1:CLS £0
60 OPEN £6,scr_295x200a33x16
70 OPEN £7,scr_154x200a327x16
80 PAPER £7,7:INK £7,2:CLS £7
90 CSIZE £7,2,1
600 PRINT £7,\\\"  OTHELLO":CSIZE £7,1,0
10 PRINT £7,\\" M.Scorer"\ " (c) 1984"
15 INK £7,1
20 PAPER £6,4:INK £6,0
30 CLS £6
40 CSIZE £6,1,0:PRINT £6,"  1 2 3 4 5 6 7 8"
```

```
50   score
10   player1=2:player2=1
20   computer
30  ELSE
40   errmess
50  END IF
60 END REPeat game
70 STOP
80 :
90 :
00 DEFine PROCedure play
10 valid=0
20 FOR rd=0 TO 7
30  check=a(rd):ofset=1
40  REPeat loop
50   direct=key+(ofset*check)
60   IF board(direct)= player2 THEN EXIT loop
70   ofset=ofset+1
80  END REPeat loop
90  IF board(direct)= player1 THEN
00   REPeat loop1
10   ofset=ofset-1
20   direct=key+(ofset*check)
30   IF board(direct)= player1 THEN EXIT loop1
40    IF cflag THEN cflag=0:mov key$
50    board(direct)= player1
60    LET d$=direct:mov d$
70    valid=1
80   END REPeat loop1
90  END IF
00 END FOR rd
10 END DEFine
20 :
30 :
40 DEFine PROCedure init
50 PAPER £0,5:INK £0,1:CLS £0
60 OPEN £6,scr_295x200a33x16
70 OPEN £7,scr_154x200a327x16
80 PAPER £7,7:INK £7,2:CLS £7
90 CSIZE £7,2,1
00 PRINT £7,\\\"  OTHELLO":CSIZE £7,1,0
10 PRINT £7,\\" M.Scorer"\ " (c) 1984"
15 INK £7,1
20 PAPER £6,4:INK £6,0
30 CLS £6
40 CSIZE £6,1,0:PRINT £6,"  1 2 3 4 5 6 7 8"
50 FOR i= 1 TO 8:CURSOR 100 CLEAR
10 DIM board(99),a(8)
20 left=60:cflag=0
30 init
40 score
50 REPeat game
60 player1=1:player2=2
70 color=7
80 keyin
90 IF valid THEN
```

```
50 FOR i= 1 TO 8:CURSOR £6,0,22*i+1:i
PRINT £6,i:NEXT i
60 FOR x= 0 TO 96 STEP 12
70 LINE £6,8,x TO 104,x
80 NEXT x
90 FOR x= 8 TO 112 STEP 12
00 LINE £6,x,0 TO x,96
10 NEXT x
20 board(44)=1:board(55)=1
30 board(45)=2:board(54)=2
40 color =7:mov "44":mov "55"
50 color =0:mov "45":mov "54"
60 RESTORE 800
70 FOR i= 0 TO 7:READ x:a(i)=x:NEXT i
80 END DEFine
90 :
00 DATA 9,10,1,11,-9,-10,-1,-11
10 :
20 DEFine PROCedure mov(x$)
30 LOCal i,x,y
40 LET y=1:IF-x$(1)=12
50 IF y%=12:y=-2
60 INK color:FILL 1:CURSOR y%,x%:FILL 0
70 END DEFine
80 :
90 :
00 DEFine PROCedure keyin
10 REPeat 11
20 color=7
30 CLS£0
40 PRINT £0,"WHITE TO MOVE"
50 INPUT £0,"Your move is ?";key$
60 IF key$="s" THEN valid=1:EXIT 11
70 IF LEN(key$)= 2 AND key$(1)>0 AND key$(1)
 < AND key$(2) > AND key$(2)<9 THEN
80  LET key=key$
90  IF board(key)=0 THEN
00     board(key)=player:mov key$
10     play
20  END IF
30 ELSE
40  errmess
50 END IF
60  IF valid THEN
70  EXIT 11
80 ELSE
90  errmess
00 END IF
10 END REPeat 11
20 END DEFine
30 :
40 :
50 DEFine PROCedure computer
60 CLS £0
70 PRINT £0,"BLACK TO MOVE"
80 PRINT £0,"My move is."
90 RESTORE 1240:color 0
00 REPeat 12
10 READ key
20 IF key=0 THEN swap:EXIT 12
30 IF board(key)=0 THEN
40 board(key)=2:cflag=1
50 LET key$=key
60 play
70 IF valid THEN score:EXIT 12
80 board(key) =
90 END IF
00 END REPeat 12
10 END DEFine
20 :
30 :
40 DATA 11,18,81,88,13,31,33,16,38,36,61,83
50 DATA 63,68,86,66,34,35,43,53,64,65,46,56
60 DATA 41,51,14,15,84,85,48,58,24,42,25,52
70 DATA 57,75,47,74,22,32,23,27,62,72,67,76
80 DATA 12,21,17,78,71,82,87,78,22,27,72,77,0
90 DEFine PROCedure errmess
00 color=4:mov key$
10 CLS£0
20  PRINT £0,"Invalid move"
30  board(key)=0
40  PAUSE 100
50  END DEFine
60 DEFine PROCedure swap
70 CLS£0:PRINT£0,"BLACK UNABLE TO MOVE"
80 PAUSE 100
90 END DEFine
00 DEFine PROCedure score
10 LOCal left,scor1,scor2
20 left=0:scor1=0:scor2=0
30 FOR i=10 TO 80 STEP 10
40 FOR x=1 TO 8
50 IF board(i+x)=0 THEN left=left+1
60 IF board(i+x)=1 THEN scor1=scor1+1
70 IF board(i+x)=2 THEN scor2=scor2+1
80 END FOR x
90 END FOR i
00 AT £7,17,0
10 PRINT £7, "WHITE=";scor1;" "
20 AT £7,18,0
30 PRINT £7, "BLACK=";scor2;" "
40 IF left=0 THEN done
50 END DEFine
60 DEFine PROCedure done
70  CLS £0:PRINT £0,"G A M E  O V E R"
80 INPUT £0,"Would you like another game
(Y/N) ?";key$
90 IF key$(1)="y" THEN
00   RUN
10 ELSE
20 STOP
30 END DEFine
```

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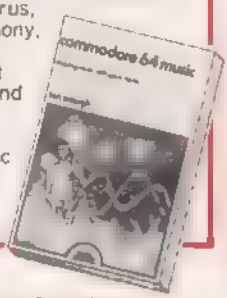

Concentrating on the Commodore C64 as a controller or peripheral to other music-making goodies, Mark Jenkins — technical editor of Melody Maker — has produced a superb new book that lets you into all the secrets of the 64's very powerful sound generation system. At only £6.95, its novel approach is a must for both musicians and micro enthusiasts.

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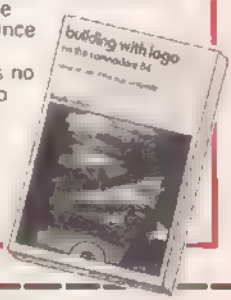

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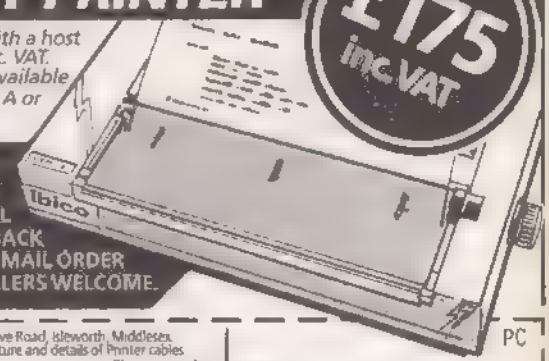

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We are always actively seeking programs for publication – either for Open Forum, the machine pages or Star Game. When sending in a program for consideration, a clear program listing should be sent, together with, wherever possible, a saved copy on cassette. Documentation – usually not more than 1000 words – should start with a general description of the program, what it does, and then some detail of how the program itself is constructed. We pay very competitive rates, according to the length and nature of the program and the quality of the accompanying documentation.

Loop Analysis

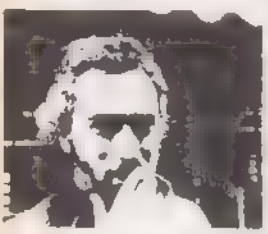
on Spectrum

Many different techniques have been developed for the analysis of electric circuits. This program uses a method known as Mesh or Loop Analysis, in which a set of simultaneous equations is set up (one equation for each loop), and are solved to determine the loop currents. The program can evaluate the branch currents in any circuit with two loops and in many circuits with three loops.

The main body of the routine is contained within lines 10-90. Subroutine *In* requests the data required and stores it in array *R* and array *V*. The simultaneous equations are solved using a method developed by Cramer, an 18th century Italian mathematician. The first part of the solution is carried out in subroutine *Calc 2* (for a circuit with two loops) or *Calc 3* (for one with three). Subroutine *Soltn* completes the calculation and displays the results.

```
  15 LET IN=100: LET CALC2=300:
LET CALC3=350: LET SOLTN=400
  20 PRINT "CHOOSE THE TYPE OF C
IRCUIT"''"TO BE ANALYSED"''"(1)
 TWO LOOPS"''"(2) THREE LOOPS"''
''"TYPE (1) OR (2)"
  30 INPUT T
  40 DIM R(T+1,T+1): DIM V(T+1):
DIM I(T+1): DIM D(T+1)
  50 GO SUB IN
  60 IF T=1 THEN GO SUB CALC2
  70 IF T=2 THEN GO SUB CALC3
  80 GO SUB SOLTN
  90 STOP
 100 FOR N=1 TO T+1
 110 CLS
 120 PRINT "ENTER SUM OF RESISTA
NCE"''"IN LOOP ";N;" IN OHMS";
 125 INPUT R(N,N)
 130 CLS
 140 PRINT "ENTER THE ALGEBRAIC
SUM (IN"''"VOLTS) OF THE EMFS IN
 LOOP ";N;","''"GOING ROUND THE
LOOP IN A"''"CLOCKWISE DIRECTION
"
 145 INPUT V(N)
 150 NEXT N
 160 FOR N=1 TO T
 170 LET M=N+1
 180 CLS
 190 PRINT "ENTER TOTAL RESISTAN
CE"''"COMMON TO LOOPS ";N;" AND
";M
 200 INPUT R(N,M)
 210 LET R(N,M)=-R(N,M)
 220 CLS
 230 IF N=2 THEN LET M=1: LET N=
N+1: GO TO 190
 240 NEXT N
 250 RETURN
 300 LET D=R(1,1)*R(2,2)-R(1,2)*
R(1,2)
 310 LET D(1)=V(1)*R(2,2)-V(2)*R
(1,2)
 320 LET D(2)=V(2)*R(1,1)-V(1)*R
(1,2)
 330 RETURN
 350 LET D=R(1,1)*(R(2,2)*R(3,3)
-R(2,3)*R(2,3))-R(1,2)*(R(1,2)*R
(3,3)-R(3,1)*R(2,3))+R(3,1)*(R(1
,2)*R(2,3)-R(3,1)*R(2,2))
 360 LET D(1)=V(1)*(R(2,2)*R(3,3
)-R(2,3)*R(2,3))-V(2)*(R(1,2)*R(
3,3)-R(2,3)*R(3,1))+V(3)*(R(1,2)
*R(2,3)-R(3,1)*R(2,2))
 370 LET D(2)=R(1,1)*(V(2)*R(3,3
```

The Music Box



Frankfurt report

More news from the Frankfurt Music Fair this week. JMS (otherwise known as Jellinghaus), who already produce a *Midi* interface and some sequencing software for the Commodore 64, announced the RMS 28C score writer program, a *Midi* master interface and the CG-X interface.

The score writer includes its own processor and allows the transposition of real-time compositions into written form. The processor will apparently tidy up your playing, adjusting timing inaccuracies by calculating acceptable note values according to context (presumably using the melody as a guide).

The synchroniser allows you to synchronise a *Midi* set-up with any clock pulses and enables sync signals to be sent and received from tape, while the CG-X interface is designed to enable analogue synthesizers to interface with a *Midi* system – presumably by use of analogue-to-digital and digital-to-analogue converters. Further information on these three from Rosetti Limited, 138-140 Old Street, London EC1V 9BL (01-253 7294).

Casio's Frankfurt contribution included their own range of synths, including the *Midi* compatible CZ-101, its full-sized (and full-priced) companion the CZ-1000 and the professional touch-sensitive CT-6000. Casio are also releasing a range of cheap package devices – the MT-85 ROM-pack synth designed for teaching, the budget-priced MT-36, mini-keyboards MT-100 and MT-210 with built-in accompaniment features and the CK-500 which includes a polyphonic keyboard, 4-track twin cassette recorder and a radio! Further details from Casio Electronics Ltd., Unit 6, 1000 North Circular Road, London NW2 7JD (01-450 9131).

Finally, more news for the serious Commodore owning musician. Allen and Heath Brenell produce a digitally controlled mixer called the CMC. At Frankfurt, they unveiled the CMI 64 and CMS 64 peripherals for this mixer. The CMI allows a Commodore 64 to control the CMS mixer using ROM-based software plugged into the Commodore's cartridge slot. The features include channel indexing, track indexing, route paging an 2048 event sequencer. The CMS expands the sequencing capability of the CMI, allows synchronization to a drum machine and enables the user to write and read a tie code to and from tape for reliable track and mix-down synchronization. For further information on these devices, please contact this column.

Gary Herman

The Music Box is a weekly column with news, reviews and readers comments on all aspects of micros and music.

Any readers with experience of computer music making or companies with new product news are invited to write to drop a line explaining what they're doing to: Gary Herman, The Music Box, 12-13 Little Newport Street, London WC2R 3LD.

```
)-V(3)*R(2,3))-R(1,2)*(V(1)*R(3,
3)-V(3)*R(3,1))+R(3,1)*(V(1)*R(2
,3)-V(2)*R(3,1))
 380 LET D(3)=R(1,1)*(V(3)*R(2,2
)-V(2)*R(2,3))-R(1,2)*(V(3)*R(1,
2)-V(1)*R(2,3))+R(3,1)*(V(2)*R(1
,2)-V(1)*R(2,2))
 390 RETURN
 400 IF D=0 THEN PRINT "****** NO
 SOLUTION ******": STOP
 405 PRINT "********";T+1;" LOOP
 CIRCUIT ********"
 410 FOR N=1 TO T+1
 415 LET I(N)=D(N)/D
 420 PRINT "CURRENT IN RESISTORS
 COMMON ONLYTO LOOP ";N;" = ";AB
S (1e-6*INT (1e6*I(N)));" AMPS "
 430 NEXT N
 440 FOR N=1 TO T
 450 LET M=N+1
 460 PRINT "CURRENT IN BRANCH CO
MMON TO";"LOOPS ";N;" AND ";M;"
= ";ABS (1e-6*INT (1e6*(I(N)-I(M
)))); " AMPS"
 470 IF N=2 THEN LET M=1: LET N=
N+1: GO TO 460
 480 NEXT N
 485 PRINT "**********************
**********"
 490 RETURN
```

Loop Analysis
• *by Ian McCallum*

3D Wave

on Spectrum

This program written for the 16K or 48K Spectrum enables you to travel inside and around a 3-dimensional sine wave. This is achieved using the following controls:

5 – travel to the right of the wave
8 – travel to the left of the wave
6 – increase the amplitude of the wave
7 – decrease the amplitude of the wave
4 – travel to the right of the wave (pst)
9 – travel to the left of the wave (pst)
0 – go inside the wave
2 – reverse out of the wave
1 – create a reflection of the wave

Program Notes	
20	Set colours
30-60	Set variables
70-110	Draw wave
120	Check if you have come through wave
130-190	Command input
200-220	Check for limits of the screen
230-240	Go back for update of wave

3D Wave
by D Prokop

Data on demand

One of the most exciting developments to hit the Comms scene in years, is due to undergo trials in the UK during the summer. Called *Bitstream* the service is very similar to the current Packet Switch Stream (PSS) network, in that it caters for small and large users alike, but with a difference. PSS requires real-time connection, that is, where both the user and the host computer must be connected to the network at the same time in order that communications can take place. *Bitstream*, whilst offering this service (via gateways through PSS), also offers what is known as 'Store and Forward' facility.

The backbone of the network will be major highways between main centres, carrying data on a mixture of wideband circuits. Similar in principle to the current PSS network, the highways will carry data 'on demand', that is, they will be available all the time.

Down to local level, major users may be connected directly to the bit-stream concentrators (again, similar to major users of PSS, who have datalines to the exchange). Small users on the other hand, will still be able to use their telephones as normal, but during the times when the 'phone is not in use, the local exchange will 'call' the phone and dump data to the modem. All this will be user-transparent, and what it in effect gives to end-users, is an electronic post-box right in the house. No longer will it be neccessary for you to call up Prestel, Telecom Gold or the like, they will call you!

The advantages are mind-blowing. For example, the Gas and Electric companies will 'call' your meter and read it electronically in the middle of the night, whilst you sleep, and, eventually, when the utility services catch-up, they will even be able to transmit an instant invoice to your in-house electronic mailbox!

Datacalls need not be interrupted when the receiver is lifted, as, with a little technical ingenuity, interleaving of voice and datacalls can be carried out. The technical term for this is *time division multiplexing* and it's a well tried and trusted method of compressing a data-quart into a pint pot. Modems capable of *tdm* are already being marketed in the States at around the $800 mark, although the price will soon drop to a more realistic level. *Bitstream* will be piloted in three major towns during mid-1985, and will enable users, and providers of the service to evaluate the possibilities for the future. More information from: BitStream Marketing, British Telecom, 151 Gower Street, London WC1E 6BA.

Robin Wilkinson

Baud Walk is a new weekly column with news on networking, databases, reviews of modems and software and points of contact for information.
Any readers with experience of networking are asked to send their experiences or news of services to Robin Wilkinson, Baud Walk *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7JD. He can also be contacted on Prestel mailbox 01 943 7217.

Arcade Avenue

Old favourites

Back to some old favourites this week. Peter Dodd and Michael McKay of Ambleside and Windermere in Cumbria have completed "one of the best arcade games currently available", *Pyjamarama* with 81% and 6185 paces. Neil Unitt and Stuart Lees of who knows where have finished with 82% and 4815 steps and 88% and 5131 steps respectively. Vernon and Russell Hutter of Dulverton, Somerset, finished with 87%. Congratulations all of you and thanks for the tips but I think we've published enough of those for the time being.

Darren Stanley and Johnathon Scarisbick of Worthing completed *Underwurlde* with 25% and 17,397 and 79%, no score given, each. They have found only 518 locations and their hint is "bounce in the right places and you're through". Perhaps more helpful is this tip from Robert Haslom of Leeds who suggests standing next to a guardian and wait until a monster hits your back at 45 degrees. Eventually you will be pushed past. Using this method he finished with a score of 22%. Neil Hibbs of Manchester does not give his score but tells us that the torch and the bow are usually found once you get past the beetle, although sometimes the torch is found past the gargoyle. Special thanks go to Chris Simpson of St Helens (BSc, A.R.C.S. pending - who says that games aren't intellectually demanding?) who finished with only 29% and sends his tips. "The maze is 16 screens wide by 52 deep and I have managed to map 565 rooms with some still to visit. The devil is found on level 17, 2 rooms from left and the exit that I found is up from level 1 and 3 rooms from the right. If the bow is found on level 12, far right, then the sword will be on level 16, 6 from right, and the torch on level 23, 8 from right. There is then no need to go beneath level 23." Chris has also finished *Knight Lore* with a score of 69%.

Sticking with Ultimate for a minute Helen Norton of Burton on Trent wants infinite lives for *Atic Atac* for her son – try merging the header program instead of running it. As soon as the computer says OK on the bottom of the screen stop the tape and list it. You will see that it has a line number of 0 so it cannot be edited until you type *Poke* 23756,1 (enter). Then *Edit* the line and immediately before the *Print Usr* statement insert: *Poke* 36519,0:. Then type *Run* (enter) and restart the tape. Andrew Watts of Withersfield has some problems about the same game. The parts of the key have the letters ACG written on them and are not too hard to recognise. One of the bits looks like a trumpet when on its own, and one bit is like a crown. They have to be assembled in the right order before you can escape. The headless man you talk of must be the hunchback and to get past him you must drop a bag of money in one of the corners of the room. As for what kills the devil I have to confess I don't know off-hand as when I played the game I just dodged past him.

Tony Kendle

The Arcade Corner is a new section for anyone who enjoys playing arcade games. If you have any comments from playing tips on difficult games or programs you'd particularly like to praise (or blame!) then write to: Tony Kendle, Arcade Avenue, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2R 3LD.

Games Wizard Competition

We are launching a search for the top UK computer games player – the best there is! Nothing else will do.

It won't be enough to be just a Left-Right zapper. Here in Popular we've carefully selected games that will really stretch arcade mettle to the limit.

The very best of Britain's game players will get to fight it out on a number of top secret new games – scheduled for release in the autumn.

Here's how it works

Study the table below and look at the column for the machine you have – these are the games you'll need to master. Send your high scores in on the form below, making sure that your scores are authenticated by a responsible individual signing the form. Please don't be tempted to cheat and get your pet budgie or unscrupulous friend to authenticate some outrageous score, because the top scorers will be asked to come in at the semi-final stage of the competition and prove just how good they are. Any score achieved using technical short-cuts – such as infinite lives Pokes – will not be accepted.

Between now and September Tony Kendle will be keeping you up to date on the *Arcade Avenue* page with just who has the scores to beat. Then, in September, the top three scorers on each machine will battle it out for a place in the final and the chance to be the first to play our 'top secret' games.

	Commodore	BBC	Spectrum	Amstrad
Game 1	Suicide Express	Elite	Technician Ted	Sorcery
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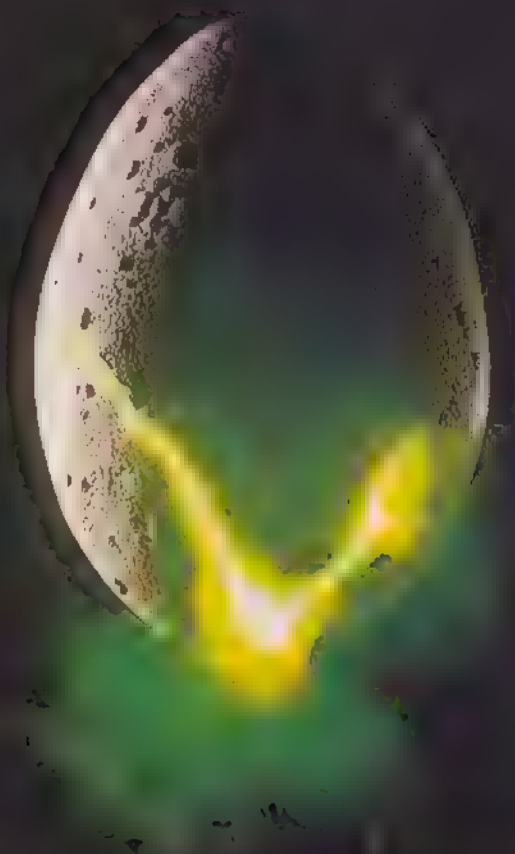

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Tony Bridge's Adventure Corner

Novice adventures

This week, and may be even next week, The Grand Elf is going to dig into the huge pile of new adventures and discuss some of them. The first batch are really for novice adventurers, and all would be good investment for the beginner.

An adventure that has been going through several re-writes, and is now in its fourth version, is *The Curse of the Seven Faces*, which I mentioned some months ago (in Vol 3 No 29), and was impressed with. In the meantime it has been taken up by Artic, who have apparently licensed it now to Imperial Software of Poole. The game is for the Spectrum, but it will shortly be available for the Amstrad too. It's a good old traditional game, with wizards and Trolls and Stupid Peasants (that's you incidentally!) and a well-designed character set that makes the Spectrum version look like a Beeb.

One example is this, from early on in the adventure: *"You are at the edge of a large, dense, deciduous forest. As you walk between the trees, the old leaves of last autumn crunch loudly underfoot, whilst above you the new buds of spring are blossoming."* Actually, that is one of the short ones – but you can see that there is atmosphere dripping from the rafters!

But good atmosphere on its own is not everything, the adventure has to play well, too – and, fortunately, *The Seven Faces* is a good adventure. All the usual things are here, from Troll Kings to East-West Winding Passages, Mazes, Strange Caverns and The Wizard's Realm and Dragon's Lair. Input is very fast, and all the usual commands are recognised, although I found myself resorting to the Thesaurus quite often. This is an adventure which will test the player's vocabulary – a command which will work in one location (such as *Smash Box*) will not work in another (where you have to type *Shatter Window*). I think this is a little unfair.

A unique feature is the Buffer Save and Load. This means that you are given the option to save, as normal, to tape, or alternatively to a RAM buffer. This saves a lot of time, as well as all the hassle of sorting out cassette leads (and getting them wrong at the crucial moment!). Thus the proceedings are speeded up tremendously, and the player is encouraged to more experimentation with tricky situations.

Experienced adventurers will charge through it with hardly a backward glance, but beginners will find themselves encouraged and not frustrated in their endeavours. I'm not so sure about the price, which is a hefty £8.95 – that's a little over the top, but the adventure is certainly a good addition to your collection (and so far, I've only found three spelling mistakes!) *Imperial Software, 153 Churchill Road, Parkstone, Poole, Dorset.*

Much cheaper is *Where am I?* from SF-Soft. This is just £2.50 from the address below, and is a Quill'd adventure for the Spectrum. The scenario, conceived by A O'Sullivan, concerns an "astronaut lost in Time and Space, trying to get back to your home planet of Eroticon VI, a planet on which everyone is so rich that all they do all day is live out their fantasies. While living out your own fantasy, to be the first man through a Black Hole, you get lost". You will have realised by now that *you* are that astronaut! "You are Tele-time-ported to random locations in the Universe. You may keep all the "Treasures" you find."

This is another adventure for the beginner – many of the problems and situations will be familiar to those more experienced players. From the start, one can go north and come across a tree. There are one or two things that you can do with a tree in an adventure, the first being to *Examine Tree*. This quite often yields the sight of a hole which contains some useful object. The other thing to do is even more obvious – *Climb Tree*, of course. In this case, you can do both, which uncovers a *Rope* which can be used to accomplish the second task, which leads to an advert!

Again, this one is mainly for the novice – objects found in one location almost immediately become useful, and the two-word command structure is predictable. SF-Soft have ensured that, although *Where am I?* follows traditional rules, it nevertheless contains some interesting novelties. *SF-Soft, 'Glandore', Stradbrook Road, Blackrock, Co. Dublin, Ireland.*

I have to admit that the next adventure (available for the Spectrum and Commodore 64) was a surprise – and a nice one, at that. After loading (in the Spectrum version, using *Load" " Code*, which we don't often see nowadays), it is obvious that *Waydor* is another solidly traditional adventure. It includes illustrations at each location, and these are almost instantaneously drawn – and very charmingly, too. Unfortunately, the graphic is presented at each and every visit, there is no facility for switching off the pictures. Although the pictures are rather pretty, on the other side of the coin, the text descriptions of the locations are rather sparse.

As I said, this an an adventure in the good old sense of lurking monsters, dark caves and castles with raised drawbridges. The thing about traditional adventures is that an experienced adventurer will have come across most of the problems before, and will know how to handle most of them. So, there is that raised drawbridge, the vampire which will bite you unless you have first drunk the holy water, the keys in one location and a locked gate in the next.

There is also the traditional maze, illustrated at each step, but it's a doddle. I'm the world's worst maze-solver, and quake with fear when confronted with any example of this most useful weapon in the adventure-writer's arsenal – but I solved this one in two seconds flat.

Waydor is a very good introduction to adventures – it's easily mapped, with lots of useful objects lying around not too far from where they need to be used. I said that it was a surprise, and this is because it is deeper and more inventive than would at first appear. However, for the experienced adventurer, the problems are not hard enough to give more than a few moments diversion. *IMS Software, 143-145 Uxbridge Road, London W13 9AV.*

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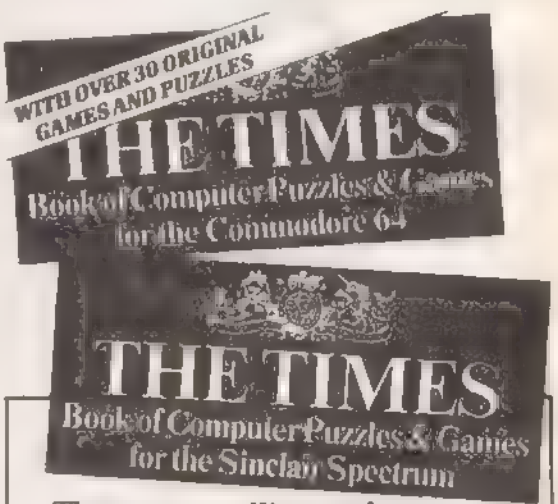

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AMSTRAD software originals: Hunter Killer, Grand Prix Driver, 3D Monstur Chase, forese at World's End. £4.50 each Tel: 061 303 0433 after 5.30

DISC DRIVE, Slimline 1EAC 100k, BBC Cable I formater, £85. 48k Spectrum, £95. Night Lore £6. Decathlon, £3.50 Other originals, £3. Mike, 86 Leicester Rd Quorn, Leics Tel 0509 413590 (weekends only)

FULLER master unit with three note sound chip, speech chip, joystick port, etc, £15 ono. Also five BBC B tapes and four discs, £15 ono. Write to E. Scott 26D Harden Place, Hawick, Roxburghshire, Scotland TD9 7BY

Wanted

SWAP 48K Spectrum microdrive 2 cartridges interface, one Kempston interface, lightpen plus carrying case for Commodore 64 and C2N tape. Apply 103 St Lukes Road, Southend on Sea, Essex.

WANTED Atari 400 full stroke keyboard, will pay around £20-25. Tel: 01-791 0136 after 8pm ask for Mun

WANTED Tape to tape hwin cassette deck Remote control - 50 watt output For Amstrad or any other 64k computer Tel Day 01-732 4832 - even 01-732 2804

COMMODORE 64 PENPAL WANTED ■ swap ideas, games and mags on our great machine Write to Gerald Taylor 17 Quarry Drive, Kirkintilloch, Glasgow G66 3RY P.S. Hi Chris in Southampton

WANTED cheap printer, disc drive for BBC B by student for course & project Tel ■ 552 8669/01 539 0132.

WANTED BBC B - £200 will pay, or £250 with DFS. Tel: Harpenden 68152

HARRIER C.V. H.O. Home Base + speech processor mike. Swap for any colour computer Tel: Berkhamstead 4566 (evens)

WANTED Atari disc drive 810 or 1050 Tel: 01 445 3937

SPECTRUM software wanted' Fighter Pilot, Knight Lore. Printer also wanted Tel: (021) 86256 (Ireland)

COMMODORE 64 games wanted on cassette - Archon II, Tiger Tanks. Also wanted instructions for 'Worms' by Electronic Arts. Steve Christian, 45 Wallgate Road Childwall, Liverpool ■

LIGHTPEN & s/w for CBM64 Needed desperately Swap games or pay cash Tel St Helens 29729

ANY ACORN - Electron owners - will pay up to £6.50 for original s/w (no BBC)! Percival after 4pm. Tel 01-902 5036.

BBC Firmware wanted. Tel Harpenden 69152

WANTED SPECTRUM 48K issue 4 joystick and other peripherals considered Tel 01-373 6354.

WANTED cheap computer ZX80 or ZX81 with manual, 1k, machine is dead Tel Southend 335916.

SWAP Cheetah 66FX1 full size keyboard with numberic pad. New unwanted gift, boxed. For Spectgrum computer. Exchange for Interface 1 and microdrive and/or cartridges (value £60). Tel 061 338 4593

WANTED TI-99/4A accessories Mini-memory, expansion box 32k memory expansion, RS232 interface. Clark Tel: 0733 47642 (Peterborough) eves and weekends.

WANTED Joystick for Vic ■ Spectrum ZX + or issue 3. BBC D. No software except amateur radio. Simpson Tel 0768 64890 (Cumbria)

Commodores for Sale

FOR SALE Commodore 1526 printer MPS 802 dot matrix printer with all leads manual still in box, bargain £250. Tel. 0827 53922

16K VIC-20, CN2, machine code monitor speech synthesizer, 5 games cartridges, 7 books, printer, 3 slot motherboard. Only £130. Will separate Tel 01-310 4031 after 6pm

CBM 64, 11 months guarantee, as new £140 o.n.o. Tel: 01-743 7809.

COMMODORE 64, C2N recorder, joystick, books, with £350 of top software. Worth £600, offers over £265. Tel: Graeme 0382 730751 after 5pm for full details.

CBM 64, original s/w inc: Spy Hunter, Raid Over Moscow etc. Tel. Farnborough 56106 after 4pm

CBM, VIC 20 16K expansion. Intro to Basic Part I, safe expander, programmes aid cartridge, machine code monitor, light pen, full slot mother board cassette with q/shot joystick, £100 original s/w, books. £165. Tel: 36979 Torquay

CBM 64 plus cassette & joysack, International Soccer + 3 cassette games. 3 weeks old. £210 o.n.o. Tel. 0506 842709 weekends only

COMMODORE 64 game 'Hercules' duplicated gift never used, highest bid secures sale (041) 959 6871 ask for Stuart.

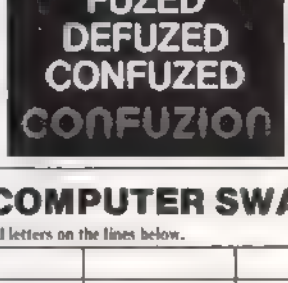
CBM 64 Easyscript on disc as new £20. Please write - B. Miller, ■ Greenway Road, Widnes, Cheshire WA8 6HE.

VIC 20 C2N tape + Basic Part I + 3K ram expansion and Snooker. Duck Shoot games had them just six months. £100. Tel: 01-633 7548.

CBM64, tape deck, software and programmer's reference guide. Quick sale. £180. Also for Spectrum VTX5000 modem and books £60. Both only weeks old. Tel Neath 750952 Andrew

VIC 20 games including Bango, Kaktus, Pharaoh's Curse, Fatty Henry, over 30 titles £1 to £5 or swap for 64 games. SAE 7 Brookland Drive Chilwell, Nottingham or tel. Notts 257747

VIC 20 I would like to exchange letters, info games, utilities with others. Please write to E. Hallas, 5 Beatrice Ave., Bebington, Merseyside L63 5JS



ADVENTURE HELPLINE

Sword of Hrakel on Vic20. How do I open the door in the forest? How do I get past the rabid wolf? Of what significance is the guru and the man in chains? Michael Steward, 80 Stonecross Road, Hatfield, Herts (Tel: Hatfield 72238).

Circus on Spectrum. How do I get into the maintenance wagon? Kieran Ward, 10 Thornhill Close, Belmont, Wantagg, Oxon OX13 6HT

Sherlock on Spectrum. How do I enter Basil's house in London? Where is the opium den? How do I open the safe 'safely'? Bruce Vivers, Wavel House, Hillhead Halls, Don Street, Aberdeen AB9 2WU.

Fantasia Diamond on Spectrum. How do I cross the river? How do I get down the manhole? Kieran Ward, 10 Thornhill Close, Belmont, Wantagg, Oxon OX12 9HT

Heroes of Karn on Commodore 64. I've found Beron but how do you get past the bear and the barrowsight? Derek Cargill, 62 Windmill Road, Kirkcaldy KY1 2XG.

Aztek Tomb on Commodore 64. I can't move off the boat. Everytime I try the dinghy I drown. I have been to the island and I have the life jacket. L Ormrod, 18 Lyndon Road, Rubery, Birmingham B45 9UP.

Fool's Gold on Commodore 64. I can't get past the mountain lion or open the rusty door. M Brewer, 135 Lodge Lane, Grays, Essex.

Knights Quest on Spectrum. How do I use the ferry boat? I have got rid of the giant. T Williams, Blaenlan Nantermis, Newquay, Dyfed, Wales.

Quest on Commodore 64. Where do I go from the underground ocean? How do I get the sword? Stewart Burns, 5 Emerald Road, Moss Nook, Manchester 22.

Heroes of Karn on Commodore 64. I am unable to get past the bear. Also I cannot get out of the castle dungeon. John Mackie, 88 Berwick Drive, Glasgow G52 3JA.

Fantasia Diamond on Spectrum. How do you cross the river and what does 'wait for it' mean? Matthew Clarke, 43-F Mandalay Road, Singapore 1130, Republic of Singapore.

Sphinx Adventure on BBC. Where is the mouse to get past the elephant? Geoffroy Pickard, 83 Great Mistley, Basildon, Essex SS16 4BD.

Valhalla on Spectrum. I cannot find Ofnir - I have looked in the cave in Mogard - nor any of the other objects. Paul Milne, 52 Exeter Street, Gateshead, Tyne and Wear NE4 8EY

COMPUTER SWAP

Computer Swap entries are limited to 30 words. Either fill in the accompanying form and send to Computer Swap, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP or telephone 01-437 4343

All software offered through computer swap must be in original condition and for private sale only.

It cannot be swapped.

Warning: It is illegal to advertise pirated software

COMPUTER SWAP

Please write your copy in capital letters on the lines below.

Name .....

Address .....

.....

Telephone .....

Top 10

Vic 20

1	(4)	Perils of Willy	(Software Projects)
2	(3)	Duck Shoot	(Master Tronic)
3	(1)	Snooker	(Visions)
4	(7)	Wizard & the Princess	(Melbourne House)
5	(8)	Flight 015	(Craig Communications)
6	(—)	Sub Commander	(Thorn EMI)
7	(10)	Jet Pac	(Ultimate)
8	(—)	Tank Commander	(Thorn EMI)
9	(—)	Sub Hunt	(Mastertronic)
10	(—)	Mickey the Bricky	(Firebird)

(Compiled by Websters Software)

Commodore 64

1	(3)	Chumbusters	(Activision)
2	(5)	D T Decathlon	(Ocean)
3	(2)	Booty	(Firebird)
4	(6)	BMX Racers	(Mastertronic)
5	(4)	Chillers	(Mastertronic)
6	(1)	Kung Strikes Back	(Ocean)
7	(2)	Hunchback II	(Ocean)
8	(—)	Fighter Pilot	(Digital Integration)
9	(—)	Raid over Moscow	(US Gold)
10	(—)	Jet Set Willy	(Software Projects)

(Compiled by Websters Software)

Spectrum

1	(6)	Ghostbusters	(Activision)
2	(1)	Match Day	(Ocean)
3	(5)	D T Decathlon	(Ocean)
4	(7)	Airwolf	(Elite)
5	(3)	Hunchback II	(Ocean)
6	(2)	Gift from the Gods	(Ocean)
7	(—)	Snooker (S. Davies)	(CDS)
8	(4)	Kung Strikes Back	(Ocean)
9	(—)	Football Manager	(Addictive)
10	(—)	Pole Position	(Atari)

(Compiled by Websters Software)

Dragon 32

1	(2)	Hunchback	(Ocean)
2	(—)	Manic Miner	(Software Projects)
3	(1)	Chuckie Egg	(A&F)
4	(—)	Dragon Chess	(Oasis)
5	(3)	Cuthbert in Space	(Microdeal)
6	(5)	Mystery of Java Star	(Shards)
7	(7)	Bug Diver	(Mastertronic)
8	(4)	Mr Dig	(Microdeal)
9	(—)	All Dream	(Dragon Data)
10	(—)	Dream Editor/Assembler	(Dragon Data)

(Compiled by Websters Software)

BBC B

1	(—)	Scrabble	(Leisure Genius)
2	(—)	Ulron	(Visions)
3	(—)	Elite	(Virgin)
4	(—)	Pole Position	(Atari)
5	(2)	Mr Ee	(Micropower)
6	(—)	Gold Digger	(Fuzebard)
7	(—)	Bird Strike	(Firebird)
8	(—)	Acid Drops	(Firebird)
9	(—)	Jet Pac	(Ultimate)
10	(—)	Frak	(Aardvark)

(Compiled by Websters Software)

Atari

1	(2)	Zaxxon	(Centresoft)
2	(4)	Attack of Mutant Camels	(Llamasoft)
3	(1)	Encounter	(Hi Tech)
4	(3)	Solo Flight	(Centresoft)
5	(5)	Centipede	(Llamasoft)
6	(6)	D Ranlys Mine	(Centresoft)
7	(9)	Carnival Massacre	(Atari)
8	(—)	Space Invaders	(Atari)
9	(8)	Diamonds	(E/Soft)
10	(—)	Steeple Jack	(E/Soft)

(Compiled by Websters Software)

Amstrad

1	(5)	Flight Path 737	(Anirog)
2	(—)	Snooker (S. Davies)	(CDS)
3	(1)	Football Manager	(Addictive)
4	(3)	Ghouls	(Micropower)
5	(8)	Monster Chase	(Romik)
6	(—)	Manic Miner	(Software Projects)
7	(—)	Hunchback	(Ocean)
8	(—)	Code Name Mat	(Amsoft)
9	(4)	Forest at Worlds End	(Interceptor)
10	(—)	Classic Adventure	(Amsoft)

(Compiled by Websters Software)

Diary

Event	Dates	Venue	Admission	Organisers
The LET'S International Trade Show	Feb 17-18 10.00am-6.00pm Feb 19 10.00am-4.00pm	Olympia 2 London W6	Free in advance from organisers	Turret-Wheatland 0823 772000
Brixham Computer Club Show	Mar 2	Northcliffe Hotel North Furzeham Rd Brixham Devon	50p adults 30p children	Brixham Computer Club 080 45 58224
Second BBC Colour Show	May 30-31 10.00am-6.00pm	Royal Horticultural Hall Westminster, London SW1	£2.50 adults £1.50 children	Computer Marketplace 01-930 1612
Northern Computer Show	April 16-18 10.00am-6.00pm	Belle Vue Manchester	Free in advance from organisers	Rood Exhibitions 01-643 8040

Readers' Chart No 11

1	(2)	Ghostbusters *(Spectrum/C64)*	**Activision**
2	(1)	Knight Lore *(Spectrum)*	**Ultimate**
3	(8)	Manic Miner *(Spectrum/C64/Amstrad/MSX/Dragon)*	**Software Projects**
4	(4)	Skool Daze *(Spectrum)*	**Microsphere**
5	(7)	Pyjamarama *(Spectrum/C64/Amstrad)*	**Mikro-Gen**
6	(–)	Automania *(Spectrum/C64)*	**Mikro-Gen**
7	(5)	Daley Thompson's Decathlon *(Spectrum/C64)*	**Ocean**
8	(3)	Underwurlde *(Spectrum)*	**Ultimate**
9	(–)	Football Manager *(Spectrum/C64/BBC/ZX81)*	**Addictive Games**
10	(–)	Forest At World's End *(Spectrum/C64/Amstrad)*	**Interceptor**

Now voting on week 13 – £25 to win

Here it is – Chart Competition Take 2!

Each week *Popular* is compiling its own special software top ten chart – compiled by YOU.

And each week we will send £25 to the person who sends in, with their chart votes, the most original (witty, neat or clever – but never rude) phrase or sentence made up from the letters (you don't have to use them all) in the titles of the top three programs in this week's chart, published above.

You can still vote in the chart without making up a slogan – but you won't be in with a chance of winning the prize.

All you have to do is fill in the form below (or copy it out if you don't want to damage your magazine) and send it off to: Top 10, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP.

Voting for Week 13 closes at 2pm on Wednesday February 20 1985. Entries received after that time will not be eligible for inclusion in that week's voting. The judges decision is final. Only one entry per individual per week will be allowed.

Name .....

Address .....

.....

.....

My top 3: Voting Week 13

1.....

2.....

3.....

My phrase is: .....

New Releases

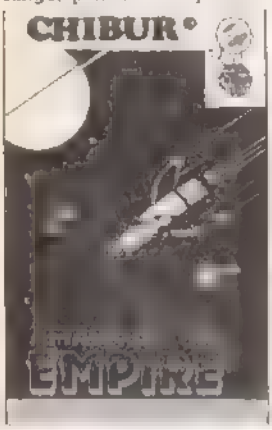
EXHAUSTING

Here's a funny thing, a wadge of paper and several programs from a company called Chibur Software. In this wadge were several reviews of its own software written by its own programmers (not a bad word to be said) and the following remarkable advice.

"Whilst we might derive some benefit from your REVIEWS we would not wish to suffer a reduction of SALES due ■ the occasional 'damning' REVIEWS we sometimes see in MAGAZINES - often written by people who do not EXHAUSTIVELY test programs." This goes on "You will of course appreciate that expenses for ADVERTISING come from increased SALES of our CHIBUR programs."

The capitals are not mine, but I'm sure Chibur is trying to tell us something. I have decided not to make use of the reviews the company provided, but instead offer my own observations.

BMX Champions is the first of the company's new budget range, priced at only £2.50.



What you get is a line of variously shaped UDG's and a little blob-like graphic for the bike, controls are left, right, jump, as you try to jump over the UDGs. It's far worse than even the very early Mastertronic £1.99 games.

Meteor Rescue and *Attack of the Empire* are both versions of other things. *Meteor* is *Luna Rescue*, an arcade game from years ago – dodge the meteors, pick up the man, go back to the mothership. At £1.99 it would be unexciting, but OK – it costs £5.95. *Attack of the Empire* is a copy of the old Atari games machines program called, I think *The Empire Strikes Back* – pick up men with Snow Speeder, take them to Rebel base, avoid the walkers. Let's be generous here – the walkers are quite well done in terms of design, but naff programming makes them flickery. In all other respects, the game is poorly programmed and utterly derivative. People have sued for less.

I could go on, but all this EXHAUSTIVE testing of programs has left me, well, exhausted.

Program *Attack of the Empire etc*
Price *£5.95*
Micro *Spectrum*
Supplier *Chibur*
3 Lonsdale Street
Leicester

VIRTUOUS

PsiFile is a sophisticated Database for the BBC and Electron. It has the two enormous virtues of being easy to use and very adaptable.

Without looking at the manual I managed to set a database, decide what were

the key fields, and then successfully access it. This is what computers are supposed to be like.

There is no restriction on the kind of information you may hold and you may use up to 30 fields and record areas, more particularly the program optimises the way memory is used so that nothing is wasted because of unused field area.

There are a number of alternatives for file searching, ends of strings, odd letters in a name, even whole surnames may be represented by 'wild cards'; special keys that basically mean you need know very few facts about a particular file in order to find it.

And on it goes, you can edit, create, recreate, save, load, peruse and search to your heart's content with each operation logical and easy to use. There is an excellent manual to get you going as well.

Program *PsiFile*
Price *£11.95*
Micro *BBC/Electron*
Supplier *Sigma Press*
5 Alton Road
Wilmslow
Cheshire SK9 5DY

ON THE QUIET

You may have seen some ads for *Confidential* and it ■ one of the most entertaining adventures I've seen in a long while. Although the packaging is hardly of the same standard, what *Confidential* manages to do is very much what the best Infocom adventures do, ie, gives you a complete package with assorted bits and bobs so that you get totally absorbed in what is, anyway, an excellent adventure.

Confidential is, fairly obviously, a detective style game, though the gist of the plot (and indeed the problem) only becomes clear as you play the game. The program is *Quilled* and includes some simple graphics which are by way of a bonus rather than a fundamental part of the game.

To accompany the adventure there is a map and a notebook, both of these are essential to solving the problems, rather than simply nice touches. For example, if you solve the first problem correctly you'll discover where the complainant lives, and soon you'll need to get in your car and drive there – not easy without a map.

In the first location there are around ■ fundamental things to discover and a basic puzzle about how to leave your office. The adventure is wonderful, the map and notebook add a lot, and it only costs £6.95. Excellent.

Program *Confidential*
Price *£6.95*
Micro *Spectrum*
Supplier *Radar Games,*
53 Flavell Street,
Woodsetton,
Dudley,
West Midlands.

This Week

Program	Type	Micro	Price	Supplier
Hacker 2000	Ad	BBC	£7.95	Micrograf
Quest for BBC Joystick	Ad	BBC	£4.95	Delta 4
Seeline	Arc	BBC	£5.50	Robico Software
Castle Quest	Arc	BBC	£12.95	Micro Power
Corpuscle	Arc	BBC	£7.95	Micrograf
Trains	■	BBC	£7.95	Micrograf
The Jolfe Plan	Ut	BBC	£9.95	Mirrorsoft
The Ket Trilogy	Ad	Commodore 64	£9.95	Incentive
Character + Sprite	Ut	Commodore 64	£12.95	Duckworth
Castle Dracula	Ad	Commodore 64	£7.95	Duckworth
Colossal Cave Ad	Ad	Commodore 64	£7.95	Duckworth
3D Skramble	Arc	Commodore 64	£6.95	Live Wire
Carry on Laughing	Arc	Commodore 64	£6.95	Live Wire
Spy vs Spy	Arc	Commodore 64	£9.95	Beyond
Microgo 1	S	Commodore 64	£9.95	Edge Computers
Poker	S	Commodore 64	£5.95	Duckworth
Lunar Crag	Arc	Dragon	£4.00	Pudgen
Mr Wongs Loopy Laund	Arc	MSX	£8.00	Artic
Oricald	Ut	Oric	£11.95	Micrograft
Confidential	Ad	Spectrum	£9.95	Radar
Moon Cresta	Arc	Spectrum	£5.95	Incentive
Subterranean Stryker	Arc	Spectrum	£6.95	Insight
Know your PSI Q	Ut	Spectrum	£9.95	Mirrorsoft

New Releases

CARRY OFF

Carry on Laughing is the somewhat unlikely title of the latest release from Live Wire Software. Unfortunately it is not some bizarre graphics adventure starring Barbara Windsor and Kenneth Williams but is instead a rather ropey multi-screen (nine actually) dodge and collect game.

What's good about it is the music programming, which is excellent and the occasional original touch but graphically the game is fairly poor, sprites are poorly designed and messy – many of the shapes could be anything.

The setting is a school and you have to move a little man around each room, turning the pupils crosses into ticks. This involves platforms, ladders, dodging things and jumping across things. One nice touch is that some of the screens provide some slowly bouncing bubbles which your man may jump into for a free lift. Turn all the crosses into ticks and you're on to the next screen. So it goes on.

It isn't dire but isn't good either. With a lot more screens and a graphic designer at work on it, there would have been enough reasonable ideas for a good game, but as it is . . .

Program *Carry on Laughing*
Price *£6.95*
Micro *Commodore 64*
Supplier *Live Wire Software*
Progress House
31/33 Mount Street
Manchester
M3 6LQ

FANGS

The blurb on the back of *Castle Dracula* is some of the worst I've seen: "Are you courageous? Do yo have nerves of steel? Has your TV broken down? If the answer to any of these is 'Yes', then this adventure is for you' – this basically implies that the adventure is such that your TV being broken is good, ie, it is unspeakably bad.

Blurb aside, I think that *Castle Dracula* is an amazingly average adventure. It understands an average number of commands, has an average number of locations (100), has an unexciting theme – Dracula, castles, etc, has no special features like graphics and is boringly laid out on screen.

The actual adventure itself seems reasonable; a lot happens very quickly and the first few locations are full of puzzles - mostly at a pretty simple level, though. *Castle Dracula* might make it as a beginners' adventure where the bare essentials of adventuring are presented, but in all other respects it's uninteresting and, at £7.95, too expensive.

Program *Castle Dracula*
Price *£7.95*
Micro *Commodore 64*
Supplier *Duckworth*
The Piano Factory
43 Gloucester Crescent
London NW1 7DY

Pick of the week

GOING UNDERGROUND

This is an interesting development – a brand new software house with a first program that is better than good. *Subterranean Stryker* from Insight is very nearly excellent; only its basic lack of originality lets it down.

The game is a mixture of *Defender* and *Fort Apocalypse* - you must pilot your spacecraft through ever more tortuous and obstacle-ridden caverns and pick up little men. Pick up all the men in each section without running out fuel and the way to the next section opens up.

Despite the plot the game is extremely addictive and if it is 80% *Defender* it is certainly the best *Defender* I have seen on the Spectrum. The sprites, though small, are well designed and include, amongst other things, a train that speeds through the lower vaults and animated men, who (as though doing hard labour) can be seen chipping away at underground rocks with pickaxes.

It's very difficult and for devotees of the fairly conventional kind of reaction/timing/blasting kind of arcade game, it's enough to keep them brain damaged for days. Hang on a moment, though, it isn't released until March.

Program *Subterranean Stryker*
Price *£6.95*
Micro *Spectrum*
Supplier *Insight*
177 Higher Parr Street
St Helens
Merseyside

QUESTING

Castle Quest is being promoted, with amazing effrontery as 'probably the most challenging game ever devised for the BBC Micro' – certain to raise the hackles of *Elite* fans everywhere. Daring to suggest such a thing means either that *Castle Quest* is beyond the realms of the mega-amazing or that Micropower are rather silly, or prone to hype, or all three. My voting is Meganess 70%, Hype 20%; Silliness 10%.

Castle Quest is certainly a cut above your average BBC game but this reflects partly on the state of BBC software. It is to platforms-and-ladders arcade adventures what *Elite*

This Week

Star Sphere	Ut	Spectrum	£6.95	Eclipse
Taspro	Ut	Spectrum	£3.95	Seven Stars
The Joffe Plan	Ut	Spectrum	£9.95	Mirrorsoft
The Micro Office	Ut	Spectrum	£9.95	SD Micro System
Chuckle Egg	Arc	Tatung	£12.95	Tatung
Hunchback	Arc	Tatung	£12.95	Tatung
Oh Mummy!	Arc	Tatung	£12.95	Tatung
Sharkhunter	Arc	Tatung	£12.95	Tatung
Six Games Pack	Arc	Tatung	£19.95	Tatung
Time Trap	Arc	Tatung	£12.95	Tatung
Superchess	Arc	Tatung	£19.95	Tatung
Astro Nut	Arc	Vic20	£4.00	New Horizons
Forces of Zar	Arc	Vic20	£4.00	New Horizons
Cecil	Ut	Vic20	£6.00	New Horizons
Bughurst	Arc	ZX81	£4.00	New Horizons
Chomper	Arc	ZX81	£4.00	New Horizons

Key: Ad — adventure/Arc — arcade/Ed — education/S — strategy-simulation/Ut — utility

was to intergalactic 3D space games. It's also very expensive – £12.95 for the cassette and £14.95 for the disc.

Devious programming means that *Castle Quest* manages to be vast, well big, anyway, and the variety of the graphics is way beyond what BBC owners have previously become used to. The idea is to move your man around a castle looking for some wizard's treasure. As you can see Micro Power has not stretched its mind to breaking point in the development of a plot idea.

Needless to say, the castle is chock full of guards, funny wobbly things, spiders and nasty looking red objects, among many others. There are also some other objects that you will need to get through some sections of the game – this area is where *Castle Quest* really reveals its basic quality. It really does work like an adventure, in that the way different objects are used does need some ingenious thought.

A neat example of the kind of thing is the prison. Sometimes rather than losing a life you will be 'caught' by the guards and placed in an area known as the prison. There is a torch, a stall, a platform and a bed. To get out . . . well let's say that the guards must be distracted and setting fire to your bed would be a good way . . . ah! but you can't reach the torch . . .

■ mixing adventure and arcade this game succeeds. Well, I have got nowhere near solving it and after quite a few plays, there is plenty left to explore. *Castle Quest* is very good indeed, and you won't get tired of it. Personally, I think it's overpriced but that's relative to games on other machines where standard price structure ■ different.

Program *Castle Quest*
Price *£12.95*
Micro *BBC*
Supplier *Micro Power*
Sheepscar House
Sheepscar Street
South
Leeds LS7 1AD

THARGLESS

Richard Shepherd is soon to release a new adventure, *Upper Gumtree* for the Commodore 64 – probably the first time one of its programs has not been first issued on the Spectrum.

Upper Gumtree is a reasonably sophisticated graphics adventure, the graphics are pleasing enough but not staggering. The sophistication lies in the fairly complex language analysis, pseudo independent characters and range of vocabulary.

The plot has the immediate virtue of being silly – you don't have to wade through a 500 page tome on the history of the Lords of Tharg. Instead of the dark mountains of Nang, you find yourself in Upper Gumtree, a nondescript sort of place of which the awful pun in the name is the most distinctive aspect.

Upper is suddenly completely transformed by a classic baddie called Blowitovitz who makes hot, cold and Tuesdays disappear completely (I wonder if he could do the same for Mondays). Your task, aided by the amiable Emma and the kleptomaniac Wally, is to stop the professor. This in turn involves a vast number of incredibly unlikely events, requiring some logically legitimate but highly lateral thinking. Great fun for 64 owners who don't want their adventures to be too earnest.

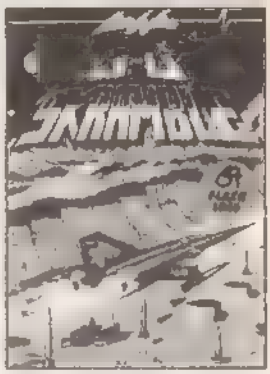
Program *Upper Gumtree*
Price *£6.50*
Micro *Commodore 64*
Supplier *Richard Shepherd*
Software
Elm House
23-25 Elmshott
Lane
Cippenham
Slough, Berks

BLAST AWAY

It doesn't take a quantum leap of the imagination to guess that something that calls itself *3D Skramble* is going to be amazingly like *Zaxxon*, not that this is necessarily a bad thing?

3D Skramble from Live Wire *is* amazingly like *Zaxxon* and as such is competing with quite a few other games on the Commodore which could be described in the same way.

So what does this *Zaxxon* have that others don't? The answer is very little, but it only costs £6.95 and there isn't actually much wrong with it. You get the usual edge-on perspective such that the landscape scrolls from one diagonal to the other. Your task is to pilot your way through an increasingly difficult series of screens.



The design is reasonably well done with the customary shadow beneath the plane and the usual baddies.

It's good enough for the price, it seems to me, if you don't have *Zaxxon*, but there is nothing here to astonish.

Program *3D Skramble*
Price *£6.95*
Micro *Commodore 64*
Supplier *Live Wire*
Progress House
31/33 Mount Street
Manchester

Compiled by Graham Taylor

New Releases is designed to let people know what software is coming on the market. If you have a new game or utility which you are about to release send a copy and accompanying details to New Releases, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2R 3LD.

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The upgrade blues

Working with a micro-computer (of the home variety) can create certain frustrations to the person less concerned with the hobbyist aspect and more involved in applications. By this I mean that traditional software (word processing, spreadsheets and databases) is often stifled, and prevented from reaching their full potential in the £200-£400 market (the price refers to the micro not the software).

Having spent two years battling with 40-column screens, tape-loading and single disc drives, loading errors which destroyed valuable data and many more of the "joys" of home computerisation – the day came when I took delivery of a "real" computer at last.

I had selected the Apricot for a variety of sound and logical reasons (in fact I liked the shape and it seemed to be fair value for money in that bracket) and I looked forward now to twin disc drives, masses of memory, double-density disc space, all the goodies I had come to assume would happen once I was able to afford my "real" computer.

The first signs of a crack in the fabric came on initial loading and attempting to copy my precious systems disc. The Apricot has a user-friendly menu which allows you to position the cursor in the box and automatic loading of the program will occur. But when I attempted this all I could get on screen after pressing *all* the right buttons was the enigmatic message *Disk exec: Not on default drive, press space bar when ready.* The answer was basically quite simple, someone had put the appropriate program on another systems disc and not bothered to mention it in the manual or change the screen message. Not to worry. Micro-users are used to such inconsistencies in manuals. But are Apricot users?

My next surprise came on loading the spreadsheet bundled with the computer. The command *Goto* is represented by the "+" sign in the manual, but try as I might it just wouldn't work. Is it me? Am I pressing all the right keys? Have I missed something in the manual? No, it isn't me, it's that manual again. It seems someone replaced all the "=" signs with "+" signs and what you should do is press "=". Just another few minutes harrassment.

Finally, after a lot of muttering I succeeded in getting my Apricot to load *Wordstar* – the ultimate in word processing. Now things would start to hum.

But wait a minute. *Wordstar* hasn't any facility for addition and subtraction. And I can't save the margins. What about a word count?

The story continues. It seems that more money, two disc drives and masses of memory count for very little when it comes to giving the customer service. I don't mean to criticise the dealers either, it's not always their fault. The main problem seems one of a total inability of the whole computer business to look carefully at what the customer wants.

But it goes deeper than that. Computers often alienate people – and one of the worst things I can imagine is for the new computer user to be faced with all the incomprehensible messages and hassles that older hands now expect. It's okay for the enthusiasts and fanatics – they'll solve the problems because it's part of the fun. But the day of the enthusiast is dying as the mass-consumer market moves in, and unless manufacturers can solve this rift in product communication some dramatic changes will occur.

Perhaps it will be the Japanese (again) who sweep the board because they are concentrating on satisfying what the main bulk of the people want. And is it unreasonable to expect a computer that actually does what it's supposed to and a manual that keeps it simple and is fairly free of mistakes?

To end, please don't think I'm not delighted with my purchase. To copy discs in seconds is a dream, to store and print out whole articles virtually instantly is amazing, and for me the answer definitely is an Apricot.

But I had thought my hassle days would be over. Instead, a new collection have just begun.

Mike Grace

Street-wise

Puzzle No 145

The Jones, Smiths and Robinsons live in three consecutively numbered houses in Poppycock Road. Each family has two daughters, their names being: Abigail, Brigitte, Clara, Davinia, Erica and Flora. All of their ages are different, although alphabetically their names are in order of age (Abigail being the youngest and Flora the eldest).

By a remarkable coincidence (common only to puzzles of this type), the sums of the squares of the ages of each pair of sisters is equal to their house number.

Can you say who is related to whom, their ages, and their house numbers?

Solution to Puzzle No 140

The answer is, A = 19, B = 89, C = 37 and D = 25.

From the number of digits in the grid, we know that A must be in the range 10 – 21 (clue 3 down), and C must be in the range 32 – 99 as it has a 4-digit square (clue 6 across).

```
10 FOR A=10 TO 21
20 B=A*A*A:B$=STR$(B)
30 FOR C=32 TO 99
40 F=C*C:F$=STR$(F):C$=STR$(C)
50 IF RIGHT$(B$,1)<>RIGHT$(F$,1)THEN
 GOTO 130
60 G=C-A:G$=STR$(G)
70 IF MID$(B$,2,1)<>MID$(G$,2,1)THEN
 GOTO 130
80 FOR D=INT(1000/A) TO INT(9999/A)
90 H=B*C:H$=STR$(H)
100 IF MID$(H$,1,1)<>MID$(C$,1,1) OR
 MID$(H$,4,1)<>MID$(F$,2,1) THEN
 GOTO 140
110 I=A*B:I$=STR$(I)
120 IF MID$(I$,4,1)<>MID$(F$,1,1)THEN
 GOTO 140
130 PRINT A;" ";B;" ";C
140 NEXT D
150 NEXT C
160 NEXT A
```

This program produces two possible sets of values, but as we have to fit a factor of C in 8 across (C * D) one set is eliminated, leaving the answer.

Winner of Puzzle 140

The winner of Puzzle 140 is Charles Wilford Smith of Ruislip, Middlesex, who receives £10.

The Hackers

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